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COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

FEBRUARY 1949

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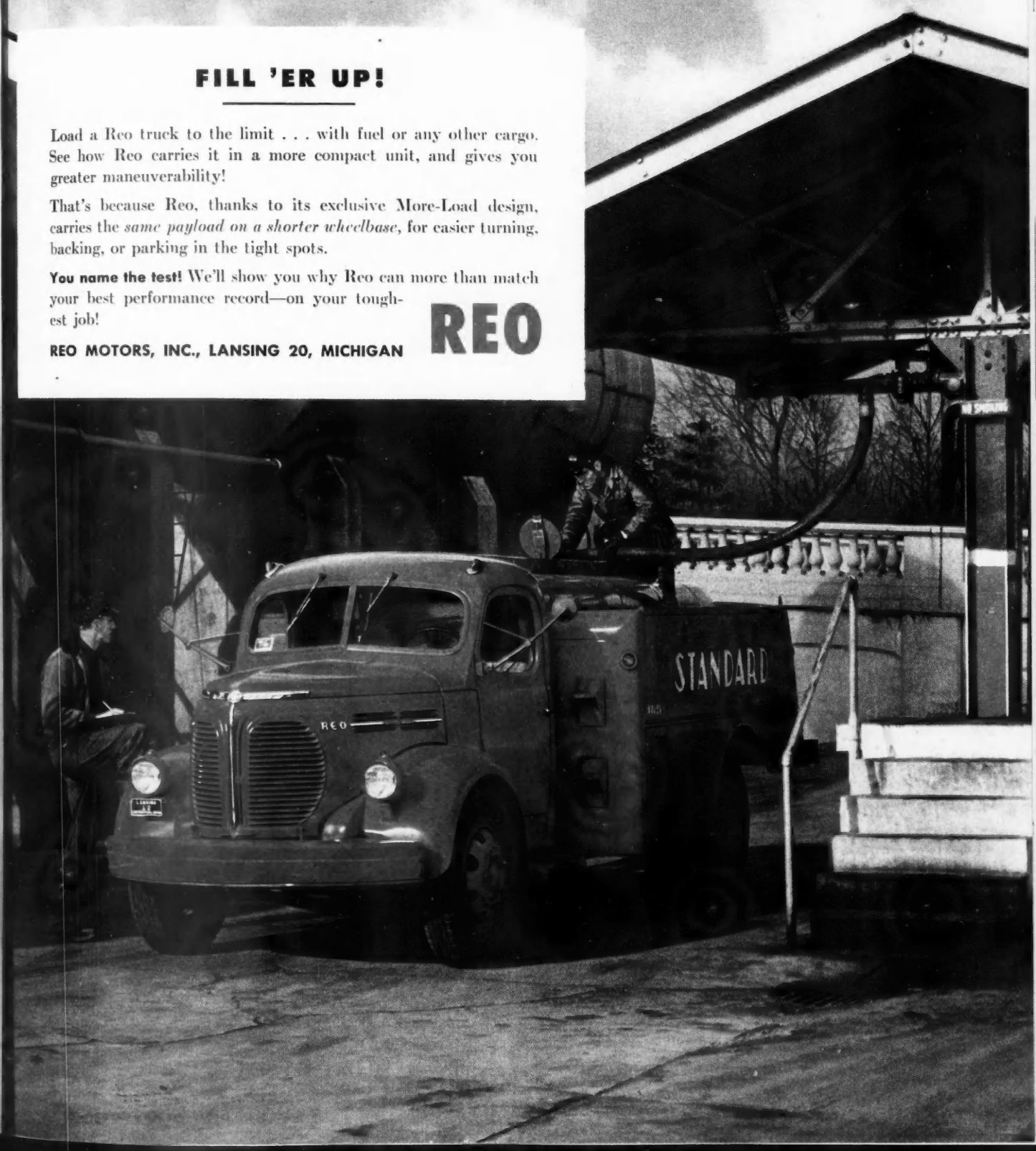

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COMMERCIAL CAR

Vol. LXXVI Philadelphia, February, 1949 No. 6

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CCJ Reader Digest

UPS Delivery Car Experiment

United Parcel Service is working continually on the development of experimental designs for parcel delivery cars. This article describes features of the company's latest developments including front-entrance, side-mounted engine, dual fuel system, dual battery system. Also described is the UPS line haul job with vertical steering and oversize springs. See page 70.

5 "W's" on 5-W Oil

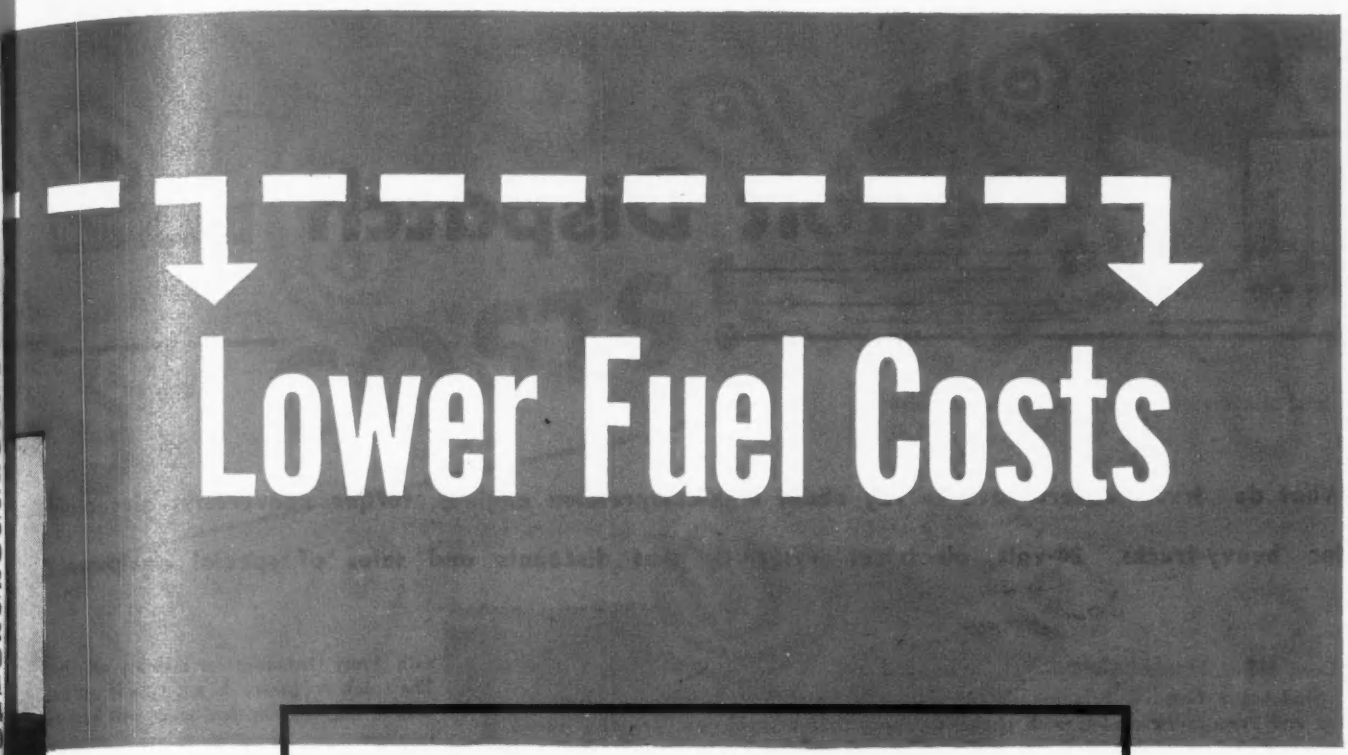
The who, what, where, when and why of 5-W engine oil, now available in sub-zero areas of the U. S. and Canada as a substitute for 10-W and kerosene mixtures. This is a frank estimate of its advantages and possible pitfalls. See page 73.

Good Will Patrol

The second in a series of articles on methods of operation and rewards obtained from fleet-operated or group-sponsored safety highway patrols. This one has some unusual angles. See page 68.

The Old Gray Mill

What used to be a six-story cotton mill in New Bedford, Mass., is now a one-story ultra-modern fleet shop and terminal for Hemingway Brothers Interstate Trucking Co. For complete details of the transition with a moral on how to make existing facilities into what you want them . . . see page 76.



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Lubricants and Fuels
FOR THE TRUCKING INDUSTRY

Detroit Dispatch

by LEONARD WESTRATE
CCJ Detroit News Editor

What do truck makers have to say about high-compression engines, torque converters, aircooling for heavy-trucks, 24-volt electrical systems, fleet discounts and sales of special equipment?

Two New Studebakers

Studebaker Corp. is bringing out 1½-ton and 2-ton truck models with changed specifications to supersede the present models of those two sizes. The trucks will be equipped with the improved Commander engine which has been increased in horsepower to 100 at 3400 rpm, as compared to 94 hp at 3600 rpm in the previous engine. The higher power is obtained by increasing the stroke from 4⅜ to 4¾ in. Factory list prices range from $1,326 for the 131-in. wheelbase chassis to $1,581 for the 195-in. wheelbase chassis-cab in the 1½-ton model, and from $1,627 for the 131-in. wheelbase chassis to $1,912 for the 195-in. wheelbase chassis-cab.

No Converters Yet

Despite continuing research, general consensus in the truck industry here is that use of torque converters on trucks is not in the cards for the immediate future, at least in view of the converters currently available. The belief is that their characteristics limit them to only special operations and that the added cost and particular operating characteristics of present torque converters do not make them practical for general truck use. It is believed, however, that the syncro-mesh transmission is coming into much more general use on larger trucks.

Ford H-C Engine

Although Ford is currently involved in a research experimental program aimed at converting the present V-8 engine to overhead valve operation, it probably will be at least three years before that type of engine will be adopted if then. The overhead valve development would be in line with the trend toward higher compression engines which is coming when adequate fuel is available. Incidentally, Ford has no plans for entering the diesel truck field.

Special Equipment Note

Truck manufacturers consistently are pressing dealers to merchandise special equipment lines so that they may realize profit from both the vehicle and the equipment need to fit it for a particular job. Manufacturers are not currently doing much about supplying dealers with such items, but at least one may get into some manufacture of special truck equipment later on when materials are in easier supply.

Cool To Aircooling

Truck manufacturers are not getting very excited about possibility of aircooled engines for trucks. That possibility has been suggested as a result of the engine developed by Continental Motors in cooperation with Army Ordnance for military vehicles. The truck engineers do not rule it out but believe that a great deal more will have to be done before the engines are a practical possibility for commercial truck use. Some difficulties they foresee are high manufacturing costs, a noise problem, and considerable power to operating the cooling fan.

Heat on 24-Volts

Although the armed forces are fighting hard to get 24-volt ignition for combat vehicles, commercial truck builders see no need for it on their products. Ford, however, is preparing to offer 12-volt ignitions on its larger jobs in order to provide a universal hookup with trailer units which are fitted with 12-volt equipment. Ford also is going to offer a higher voltage generator for trucks requiring greater output of current for special equipment.

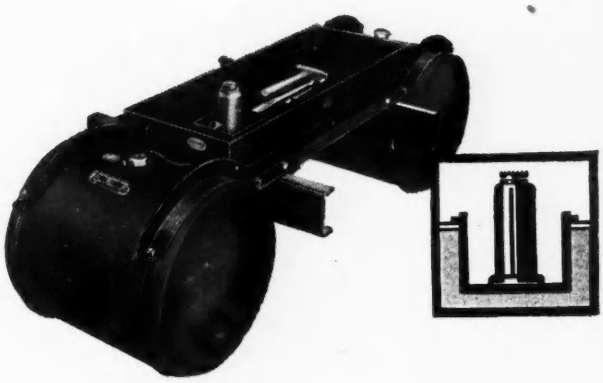
Discount Quandary

Studebaker has not yet dropped its fleet discounts on trucks, but is expected to do so before very long. It is understood that the Federal Trade Commission is looking down its nose at such discount deals and for that reason the discount plans prevalent in the industry prewar are not expected to be restored. Actually, truck sales managers are realistic about the situation and think that when selling really gets tough, inducements of some kind will be offered to clinch buyers. In fact, discount deals at the dealer end are already in evidence in some places.

Nash Service Trucks

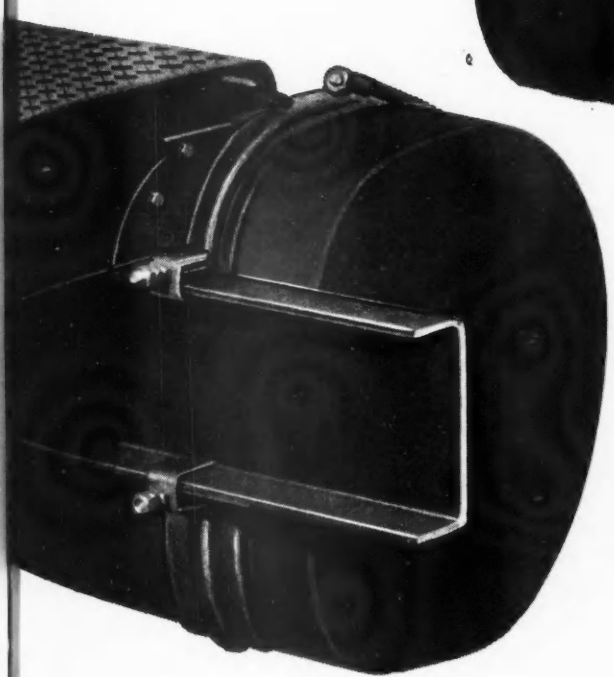
Although Nash trucks for the domestic market appear to be as far away as ever, production for export has been fairly steady. Recently limited output was started on special service cars for sale exclusively to Nash dealers. Looking over the one at left are: F. G. Sease, asst. general sales mgr.; H. C. Doss, vice-pres., and W. A. Cook, truck and commercial mgr.

CUT COSTS!



Prior Set showing position of hydraulic jack in tool chest jack well.

End-Fill OB-Round Tank has adjustable filler neck for under body mounting on any panel, stake or dump body truck.



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by **GENE HARDY**
CCJ Washington Correspondent

Washington Runaround

What do Rigid Conduits have to do with the legality of delivered prices? . . . How big is the new budget for military vehicles? . . . What is Army's new oil change period? . . . What is status of fuel supply?

Pricing Policies Clearer

The outlook is brighter for action to clarify the present confusion regarding the legality of delivered pricing methods. (COMMERCIAL CAR JOURNAL, January, p. 10). Legislation to permit delivered pricing and the absorption of freight in good faith to meet competition has been introduced in both Houses of Congress. Hearings on this legislation before the Senate Trade Policies Committee got underway on Jan. 24. Congressional interest in the problem has been aroused and the prospects for eventual action are good.

It is also possible that a clarification may come from the Supreme Court before Congress can act. The Court, which started all this controversy with the now famous Cement Decision, will soon have an opportunity to tell industry whether the widely-accepted interpretation of that decision is correct, in other words, has all freight absorption been outlawed?

This opportunity arises out of the Rigid Conduit case, in which the Circuit Court upheld a Federal Trade Commission order which in two separate counts found the Rigid Conduit industry guilty of using a basing point system and absorbing freight. The industry was adjudged guilty if use of this method of pricing was on an individual basis and, in another count, as part of a conspiracy.

It is this conflict that the Supreme Court has been asked to resolve and it is most unlikely that the case will not be heard. If the Court's decision results in amending the FTC order so that freight absorption is illegal only as part of a conspiracy, and the Pittsburgh Plus order is also amended permitting U. S. Steel to absorb freight, certain FTC officials feel that the whole delivered pricing mess will evaporate overnight. There would be no need for legislation or further investigation by Congress, according to these sources.

Permanent FCC Frequencies

Final allocation of frequencies for mobile radiotelephone services will be contained in an order expected to be issued by the Federal Communications Commission early this month. Included will be frequencies for intercity truck radio service, pickup and delivery services, intercity buses, urban transit vehicles, taxicabs, ambulances, auto clubs, and the general public.

Frequencies were originally assigned to these classes of users last June and the forthcoming order will establish permanent service in the land transportation field.

Huge Budget For Trucks

The Federal budget for the year 1950 calls for an expenditure of $83,592,000 for military motor vehicles. This is the largest amount requested since the end of the war and is more than double the amount available for trucks for the fiscal year which will end June 30, 1949. Expenditures for trucks for the fiscal year 1948 amounted to only $1,700,000. Of the total requested for 1950, $75 million will be spent for military trucks of improved World War II types.

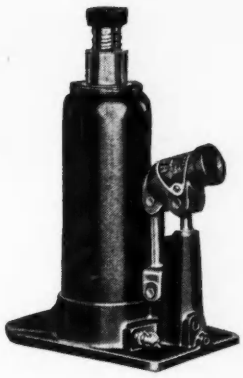
Transport Study Continues

The national transportation inquiry being conducted by the House Interstate and Foreign Commerce Committee is going ahead full steam. This inquiry, looking toward formulation of a national transportation policy, was initiated by means of a formal House resolution during the 79th Congress and extended through the 80th Congress. The resolution expired with the demise of the 80th Congress, but this has not affected the inquiry which is now under the direction of the new committee chairman, Representative Robert Crosser, D., Ohio. While a new extending resolution had not been passed as this issue went to the printers, committee sources told COMMERCIAL CAR JOURNAL that this was not essential since such problems are within the scope of the regular functions of this committee. Main purpose of a new resolution would be to provide additional funds for this work. However, additional funds are not vital at this time, since so much of the current work is being carried on by private organizations.

For example, the national opinion survey, designed to obtain reaction on transportation problems from all segments of the public, being conducted for the Committee by the Transportation Association of America, is in full swing. Regional panels and forums are the backbone of this survey. The committee hopes that the final report on TAA's work will be made to the Congress "some time during the 81st Congress, probably early in 1950." This is a

(TURN TO PAGE 148, PLEASE)

does it



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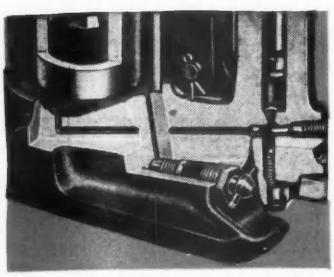

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* * *

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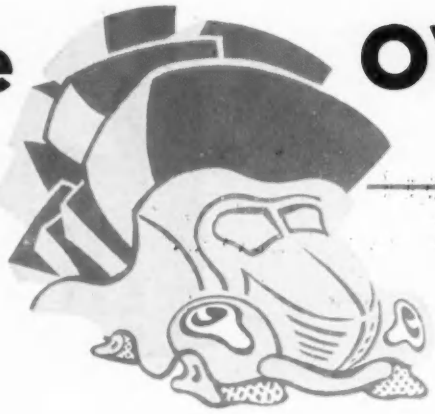
LEADS IN JACKS

The OVERLOAD



by George T. Hook
Editor

The Crisis in Highway Modernization and Highway Financing

HIGHWAY development and highway financing have reached the crisis stage in the United States. The obsolescence of the present highway plant is so pronounced and the cost of modernizing it so stupendous that adjustment in administrative and financial methods is imperative. Otherwise the political and economic structure which has supported the growth of automotive transportation will be undermined with serious effect on the latter.

• • •

One of the symptoms of this crisis is the current epidemic of toll road authorizations. Another is the demand for increased Federal aid. These devices—encouraged by tax administrators—have gained acceptance with many taxpayers because they are deceived into thinking that when private investments finance toll roads and when other financial assistance comes from the Federal level, the burden is thereby shifted from their own shoulders.

• • •

Such financial expedients to secure modernized highway facilities will not meet the crisis. Nor will horizontal increases in gasoline taxes and other user charges provide a reliable and equitable method of underwriting highway modernization.

• • •

Addressing himself to this problem, Charles L. Dearing, of The Brookings Institution, is of the conviction that the real solution lies in removing the inequities and administrative imperfections that have become imbedded in "highway financial practices which have already proved unequal to a lesser task." Mr. Dearing, as we read his contribution to a forum on planning and paying for highways under the auspices of the American Petroleum Institute Committee, finds no fault with our present system of levying highway user charges. His complaint is not with the way money intended for highways was collected but the way it was dissipated.

• • •

"During the 1930's," he points out, "there appeared marked tendencies toward the violation of elementary standards of equity in the expenditure of user funds. Major abuses arose because user taxes were used to support large mileages of local roads whose existence, conditions and use were of incidental interest to the bulk of motor-vehicle owners. The attendant dispersion of available funds resulted in progressive lag between the rate of modernization on the major arteries of rural travel and the increasing traffic loads to which those facilities were being subjected."

• • •

This progressive lag built up the terrific obsolescence which was generally recognized about 1940. But have legislators, administrators or taxpayers done anything since then to remedy this unsavory condition? Not a thing. "On the contrary," says Mr. Dearing, "local governments and their constituents have not only retained customary financial aids, but have demanded a proportionate allocation of the funds derived from increased gasoline taxes and license fees. These demands have been imposed and realized as a *political condition to the raising of necessary revenue for major highway modernization.*"

• • •

There you have it: politics of the low order, the log-rolling, back-scratching type, is at the root of our present highway crisis. If taxes and fees are increased their misapplication will simply be on a higher plane than before. The only way to get rid of this "tie-in selling," as Mr. Dearing calls these political shenanigans, is by organized consumer resistance in the form of political action.

• • •

The politicians and their servants are aware of this and are up to typical political tricks to divert the attention of taxpayers. One of these is the advocacy of toll roads. Yet toll roads will only aggravate the situation. Vehicle owners will pay a direct toll for the facility they are in greatest need of, and their gasoline taxes and license fees will be frittered away in greater amounts on the "tie-in sale" facilities in which they are not primarily interested. Is anyone so naive as to believe that toll roads will be parallelled by free roads of the same modern standards? It would bankrupt the toll road.

• • •

Another trick is the application of pressure by state highway officials on Congress for greater Federal aid. This, in Mr. Dearing's view, is an effort to escape the consequences of unsound policy at the state level. It gains the support of constituents who think that thereby they are shifting to other shoulders the burden of provid-

(TURN TO PAGE 18, PLEASE)

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THE TRUCK OF VALUE

GMC TRUCKS

GASOLINE • DIESEL

The OVERLOAD

Continued from Page 14

ing highway funds. It is Mr. Dearing's belief that "either the present Federal-aid allocation formula must be scrapped or the conception of Federal aid as a tax-equalization program will have to be abandoned." Under the present formula only 20 states get Federal aid in the strict sense of the term. Eighteen states get back approximately what they contributed in Federal gasoline taxes. The other 11 states are being penalized. The difference between what they pay in and what they receive in aid is being used to subsidize road building in the first-mentioned 20.

• • •

Still another device to divert attention from the larger, the basic problem has been the popaganda directed at the size and weight of trucks and their effect on highways and traffic conditions.

• • •

All of this provides truck operators with valid reasons for opposing toll roads, Federal aid requests that are unrealistic, and higher gasoline taxes and license fees which would be dispersed on the same old "tie-in sale" basis. Such opposition will bring the facts supporting the opposition before the electorate and perhaps influence remedial political action.

Why Give Safety Honors for Heroism?

EVERY now and then a truck driver who has performed a notably heroic deed is publicly proclaimed and acclaimed the "Driver of the Month." This has disturbed fleet men who are charged with promoting safe driving practices, and with good reason.

• • •

The Driver of the Month award, sponsored by the ATA and its affiliated state associations, was devised to honor the truck driver in each state who, because of a meritorious safety record, had been nominated by his employer for the award.

But along comes a truck driver with an act of heroism, and, without any other qualification, he is named the Driver of the Month. What has heroism got to do with safety? It deserves to be rewarded but certainly not with an honor that is a credential of safe driving. Unless the heroic driver is also a safe driver with a record nearly as accident-free as other drivers nominated, he should not be named the Driver of the Month.

• • •

Too often the heroic type is the chance-taking type. It is his nature not to count the risks involved in a particular act. He is, in short, inclined to be reckless.

• • •

It is the reasonable fear of safety men that giving Driver of the Month honors to heroes will bring this device for stimulating safe driving into disrepute. Truck drivers with good safety records will be more likely to ridicule than strive for a title that is awarded for recklessness.

A Move to Standardize Signalling

THE American Automobile Association membership likes courtesy signalling by truck drivers so well that it wants highway user groups to get together, to consider the matter and to adopt a uniform signalling code to be used, we presume, by all drivers—car, bus and truck. At their annual convention, AAA delegates voted unanimously that truck and bus groups be approached on the matter.

• • •

As we have said before, courtesy signalling—especially at night and as practiced by some drivers—is fraught with liability. Some drivers don't wait for the following motorist to ask for the road. They anticipate his intention by blinking their lights to indicate all is clear ahead and that, therefore, it is safe to pass. What would happen in court if, in the event of an accident, the motorist claimed he had no intention of passing and did so only because the truck driver signalled that it was safe to do so? Did the truck driver by his action contribute to the accident? If the jury says "yes," the owner of the truck can reach for his checkbook.

• • •

We have been informed by a source versed in legal lore, that if, as in the hypothetical case just cited, the driver is adjudged guilty of contributory negligence, it will be the truck owner, not the truck driver, who pays. This is established in law by the servant-master relationship. The owner, we understand, pays even if the driver had been previously instructed by his master that he must never practice so-called courtesy signalling.

• • •

The invitation of the AAA should not go unheeded. There is such a thing as courtesy even among highway user organizations, and this is an instance where the desire of truck operators to cooperate with motorists can be demonstrated. Truck, bus and motorist groups should meet and tackle the problem. But before there is any attempt to agree on standard signals, the legal liability involved ought to be thoroughly explored. All highway users—the motorist as well as the "commercial" user—will want some assurance on this point. Therefore, after the signalling standards committee is duly constituted, its first order of business should be the designation of a sub-committee consisting of each group's legal counsel. These counsellors should be instructed to consider the aspect of liability and bring in a report based on a study of legal precedents as established by court decisions. The object of this should be to guide the committee along a course that would not lead vehicle owners into legal entanglements. Or, if the facts warrant, advise the committee to drop the matter because of danger of such entanglement.

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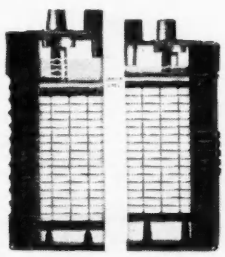

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Free Loan to Fleet Owners

Fleet owners of 25 or more trucks can get free loan of Goodyear's exclusive PowR SavR. It insures safe, *automatic* care of idle truck batteries right in your own garage—batteries always at power-peak, instantly ready at any hour. See your Goodyear dealer for details.

We think you'll like "THE GREATEST STORY EVER TOLD" Every Sunday—ABC Network

YKL BATTERIES
—for buses, trucks, tractors

GOODYEAR

THE GREATEST NAME IN RUBBER

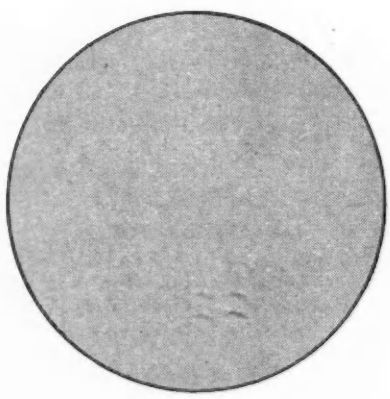
YKL, PowR SavR—T.M.'s The Goodyear Tire & Rubber Company

Time Out for PLAY

by
BORIS RANDOLPH

Middleman Wanted

The object in the following problem is to find the middle (or center) of a thin circular metal plate about the size shown below. You want to punch a hole in that middle with a hammer and nail that you



have—and that's all you have to work with, a hammer and nail, and, oh yes, a business card, the usual 3½ by 2 in. business card; no pencil, no ruler, nothing else. How do you find that middle? It may come in handy some time.

Our Favorite Word

Far be it from this magazine to pat itself on the back, but there is a word in the English language which it can't help preferring above all others. The word we have in mind contains the letters CCJ in that order and means "of striking ability and excellence, fine and dandy, having exceptional worth and merit, etc., etc." We blush to go on. What is this 11-letter word? Fill in the blanks below correctly and you'll have it.

C — — C — — — J — — —

Horsepower Words

Following are eight 5 and 6 horsepower words. Each word, that is, is composed of 5 or 6 letters, and each contains the letters HP as indicated. How many of them can you complete correctly, using the definitions on the left to guide you?

1. Something admired on a pretty girl — H — P —
2. A mechanic's assistant — H — — P — —
3. What you're bound to be when everything goes well — H — — P —
4. Just an accident — — — H — P
5. A sign of having had one too many — H — — — — P
6. What you have to be to see the point — H — — P
7. A highway robbery — H — — — — P
8. Not very expensive — H — — P

Drive a Truck to China

If you'd like to drive a truck to China, here's your chance—on paper, that is. Just start out with the TRUCK shown, and, changing one letter at a time, form a new word each time—till you reach CHINA.

	TRUCK
A feat of magic	– – – – –
A pain in the neck	– – – – –
A hen's child	– – – – –
The sound of money	– – – – –
	CHINA

Ever Drive a Rebus?

Ever drive a rebus? Here's your chance. DDD L is a rebus. It stands for DIESEL (D's L). Get it? And so is FULL (W W (UNDER) FULL. Isn't that WONDERFUL? Now try the ones below and don't say we didn't warn you.

1. MEN MEN
   MEN MEN
   They help you keep your nose to the grindstone.

2. EEEK!
   OH MY!
   Not a lady who's seen a mouse, just the most saving thing about operating a truck.

3. ABCDEFGHIJKLMNG ————
   Ignore the first fourteen letters and you can still get the right answer. Nearly all motors thrive on it.

4. Every engine needs this after a while.

L G
HAW

A $125 Headache

Two mechanics have just been paid. Each tears open his pay envelope and finds $125 in it. Then each discovers that he has twice as many two-dollar bills as one-dollar bills, and three times as many five-dollar bills as ones, twos and tens. When each counts the actual number of bills in his envelope, however, he finds he has a different number. How many bills does each one have?

DON'T PEEK—But Solutions Will Be Found on Page 146

Conference Corner

Question:

Should Truck Leaf Springs Be Lubricated Periodically in the Field?

Factory Engineers Disagree . . .

. . . in their recommendations with respect to this problem, although they appreciate the need for qualifying an answer. They report that men in the fleet field themselves disagree on inner leaf lubrication. Some claim that oil causes abnormal flexing and shorter service life.

Another engineer states that while it is a matter of opinion rather than fact, he recommends lubrication to reduce friction and rust.

The truck is adequately sprung for long life under specified loads and service, says another, but if the operator insists on greater overload than recommended, he can justify the omission of lubrication.

Lubricate for Better Absorption of Shocks

by R. H. Gale
Sales Dept.
Eaton Mfg. Co.
Axle Division

"In the matter of chassis spring inner leaf lubrication, truck fleet owners are divided in opinion as to whether this is desirable. Some operators, a minority perhaps, regularly lubricate between the leaves while others claim this procedure causes abnormal flexing and shorter life.

"In the military field, truck springs are furnished without lubrication and from reports are never lubricated in their ordinary service. This is in contrast with bus operators who invariably lubricate the spring leaves. The bus operator's example does show that with passenger comfort involved, the extra cushioning and quieter operation from spring lubrication is almost a must. Surely trucks carry the driver who should also have consideration, to say nothing of the motor and other parts of the truck.

"Why should not the same reasoning apply to the lubrication of truck springs as to passenger cars and buses? After all, the spring is there, a flexible medium; why not use it 100 per cent? With an unlubricated spring the deflection from a road shock is in the order of 90 per cent as great as that of the lubricated spring. In the matter of damping out oscillations the lubricated spring will require a longer period of time for this slowing down operation.

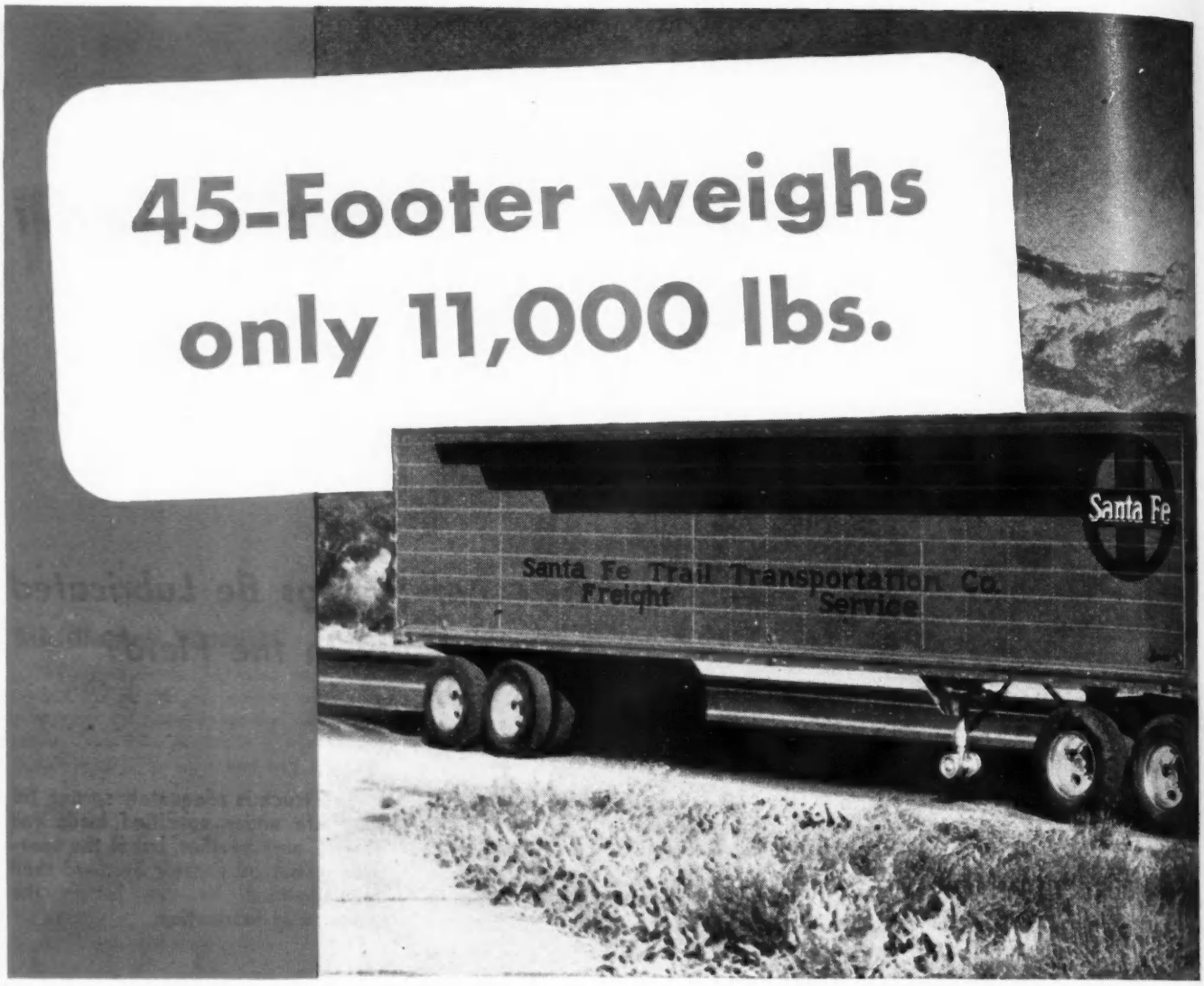
"As an example an unlubricated spring with a 300 lb rate of deflection and subject to an 800 lb shock load will dampen out with about 2½ oscillations. A lubricated spring under the same test will oscillate about 3½ times. If shock absorbers are not used, there is some slight merit in favor of the spring that dampens out more quickly.

"However, there are some other factors that should be considered with the unlubricated spring. In the first place the truck spring manufacturer always furnishes the springs with inner leaf lubrication. The lubricated springs are severely tested and tried in service by the truck manufacturer on good and bad roads. As a result of the thorough going-over, the American truck should be considered adequately sprung for long life under specified loads and service. However, should the truck owner operate his equipment to a greater overload than recommended, for the time being, he can justify the omission of lubrication. After all, if the overloaded camel in the story could have had a 10 per cent gain in shock absorptive capacity, perhaps the last bale of straw would not have undone him.

"Another consideration in regard to truck springs is that the owner keeps the job first hand for a longer period than would usually be the case with passenger cars. The truck that keeps going with minimum expense is usually not traded in. Outside the tires, springs are one of the most severely stressed members in the truck. A policy of operation that is the best in the long run is what the average truck owner should follow.

"With the omission of plate lubrication most springs in

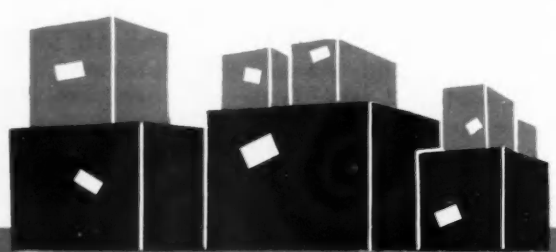
(TURN TO PAGE 30, PLEASE)



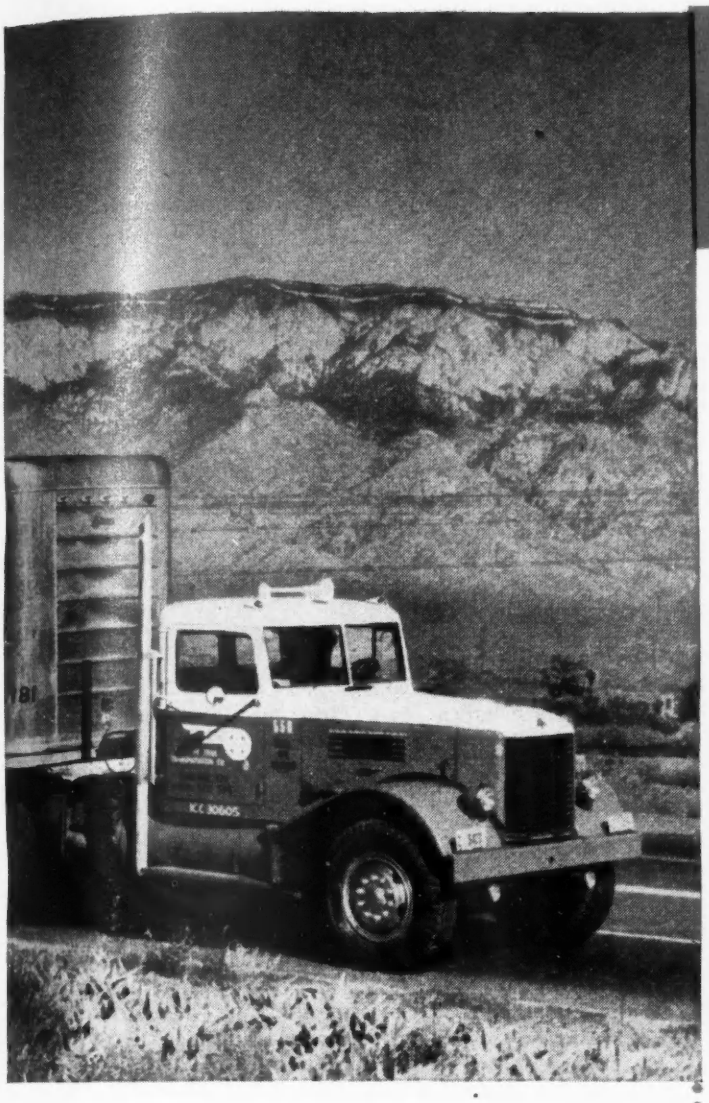
...thanks to Alcoa Aluminum!

Santa Fe Trail Transportation Co. wanted to reduce ton-mile operating costs over its long western routes by hauling more cargo per trailer. *Problem:* How to add load capacity and still stay within state limits on gross weight. *Answer:* Super-long trailers of Alcoa Aluminum that step up the payload without increasing dead weight.

Look at the span between those tandems! It gives you some idea of the strength and stiffness of aluminum monocoque construction used by Brown Industries, Spokane, Washington, in building these 45-foot trailers. Aluminum's lightness makes possible thicker panels, more massive structural mem-



EXTRA PAYLOAD IS THE PAYOFF!



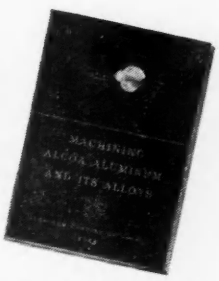
bers. Despite its size, each Santa Fe trailer weighs only 11,000 lbs.—less than most conventional 32-foot trailers.

Time and again, fleet operating records show that truck and trailer bodies of Alcoa Aluminum pay off in bigger payloads, longer equipment life and lower costs. Right now, however, with the world demand for aluminum exceeding the supply, your trailer builder may not be able to get all he wants for new equipment. But ask him for facts and figures on aluminum. He'll do his best to take care of you.

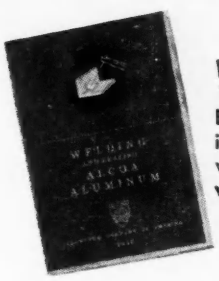
TRAILER BUILDERS: Do you have these helpful Alcoa Manuals?

FORMING—64-page booklet, "Forming Alcoa Aluminum", describes best practices for press-work, sheet metal work, tube and shape bending.

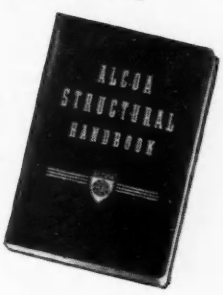
RIVETING—56-page booklet, "Riveting Alcoa Aluminum", covers joint design, rivet selection, driving methods.



MACHINING—68-page booklet, "Machining Alcoa Aluminum and Its Alloys", gives procedures for turning, boring, planing, shaping, milling, drilling, reaming, threading, sawing, filing, cutting, grinding and finishing.



WELDING AND BRAZING
134-page booklet, "Welding and Brazing Alcoa Aluminum", detailed information on torch welding, arc welding, resistance welding and various methods of brazing.



STRUCTURAL HANDBOOK
224-page book, "Alcoa Structural Handbook". Section elements of various structural shapes produced in Alcoa Aluminum.

Alcoa "How-to-do-it" sound movies also are available on riveting, machining, and various types of welding and forming operations. Ask your nearby Alcoa Sales Office to lend you the films, supply the free booklets you need. Or write ALUMINUM COMPANY OF AMERICA, 2139 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN ALUMINUM

ALCOA ALUMINUM

Conference Corner

Continued from Page 27

service will suffer corrosion fatigue. Spring steel being acutely susceptible to pits and notches from corrosion will fail at much lower stresses than normally would be the case if tension surfaces were protected.

"We feel that lubrication is equally good for leaf springs whether passenger car, bus or truck types are involved. Again we say lubricate the springs for better absorption of shocks and you will find it best for the long run."

Lubricate to Reduce Friction and Rust

by H. T. Moore
President
Tuthill Spring Co.

"In our opinion, the controversy over lubrication of springs will never be settled conclusively, as it is a matter of opinion rather than a matter of fact.

"We believe in greasing truck springs, not only to reduce interleaf friction, but also to reduce rusting. Reducing interleaf friction might be carried too far by the use of rollers or balls between the leaves, but the liberal use of grease will not reduce friction enough to cause trouble from rebound."

Lubrication Reduces Carrying Capacity

by R. M. Schutz
Sales Promotion Mgr.
Maremont Auto Products, Inc.

"To a certain extent a spring depends for its action on interleaf friction. For example, take two separate leaves, and say that on each leaf we can place 10 lb to get 1 in. deflection. If we were to place these two leaves together for 20 lb of weight we should get 1 in. deflection, but as a matter of fact the friction between the leaves gives it slightly less than 1 in. deflection when these two leaves are placed together. When lubricant is introduced it reduces this friction and thereby reduces the carrying capacity of that spring.

"If any lubricant is used, a heavy lubricant should be forced under pressure between the leaves, or applied with brush when spring is being assembled.

"Avoid the use of light oils except on the surface for cleaning purposes. Light oil getting between the leaves greatly reduces interleaf friction and causes the spring action to become excessively lively and hastens spring breakage.

"Where springs have been oiled or improperly lubricated the result would be excessive deflection and premature breakage. In such cases it is advisable to wash out the improper oil with gasoline or benzine in order to restore the proper interleaf friction."

There Are Good Reasons For Either Practice

by W. F. Williams
Engineering Dept.
William & Harvey Rowland, Inc.

"This subject is one on which there is a majority of opinion for no lubrication between spring leaves, yet the minority, which is approximately 40 per cent, is no small number and they have many and good reasons for using interleaf lubrication. We will try to show why both sides are right—when and where.

"An ideal truck suspension would be one having variable rate leaf springs designed for medium, empty and loaded frequencies having interleaf lubrication, constant, not grabby but enough to supplement good shock absorbers which are also desirable. These shock absorbers would be of the single-acting rebound control only, inertia valve type producing high rebound control only when the body rises but allowing the axle to drop into holes without pulling the body with it. This idea of variable rate two stage main springs with helpers and with shock absorbers is not always possible or practical but there it is to shoot at!

"No lubrication between spring leaves is *desirable* on trucks with no shock absorbers for the following reasons:

1. To minimize rebound.
2. To lengthen spring life due to smaller and fewer amplitudes.
3. To reduce pitching which might occur if springs were copiously lubricated.

"No lubrication is *undesirable* for the following reasons:

1. It produces uncomfortable, jarring and rigid riding for the driver, the degree of which will vary with the dryness and rustiness of the leaves.
2. It jars and shakes the body and chassis severely loosening bolts and fatiguing body and frame alike.
3. It allows water to get between the leaves producing less interleaf friction when wet and when dry rusts the leaves producing high interleaf friction.

"It is well to keep in mind that the ideally lubricated leaf spring, and we believe it should be lubricated somehow, is one in which the friction whether it be high, medium or low, should be constant throughout the temperature range or it should be controlled and it must not cause squeaks or noise and finally it should supplement the rebound control to give the rideability and roadability desired."

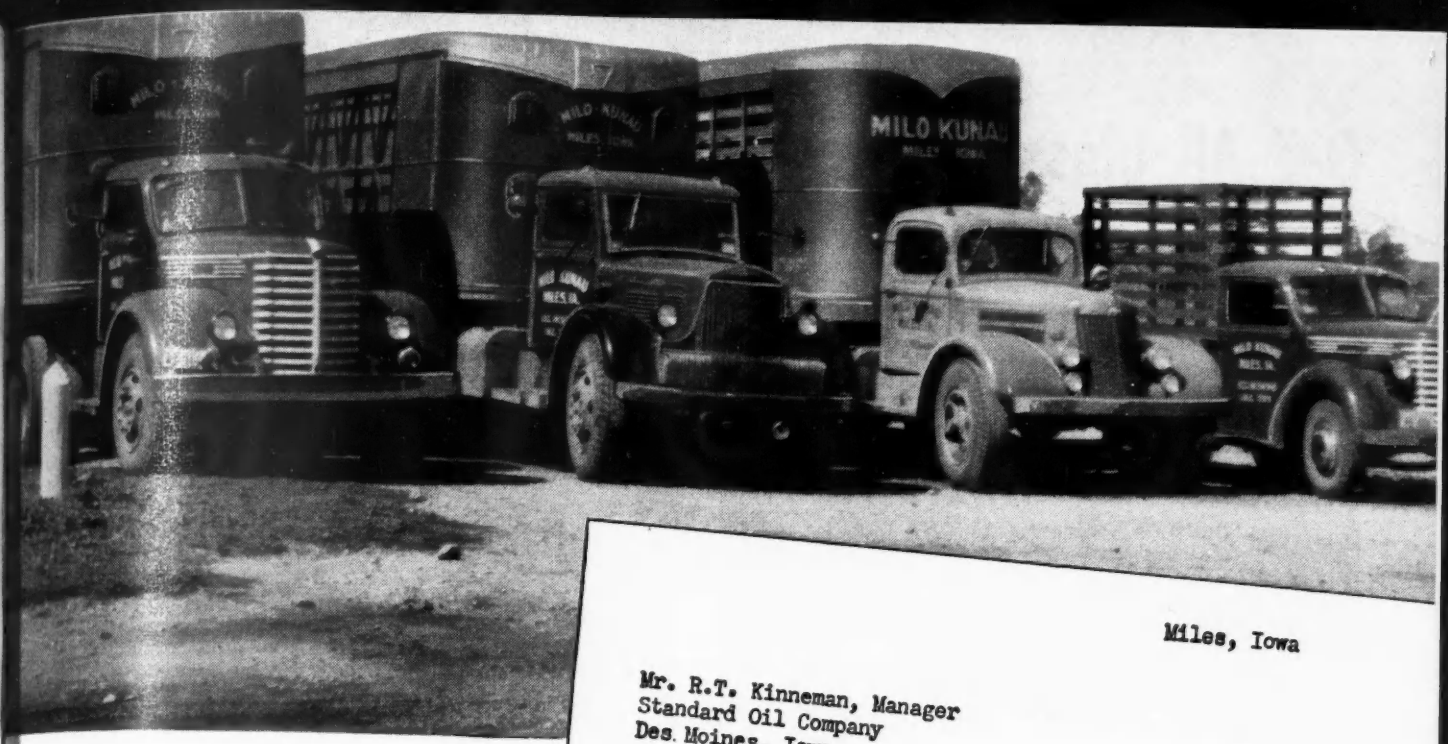
Lubrication Allows Bounce and Breakage

by Murray Fahnestock
Leaf Spring Institute

"When 171 fleet operators, in charge of 27,932 vehicles, were questioned, 99 of them, or 60 per cent, replied "No"—they did not lubricate springs. While 64, or 40 per cent, replied "Yes" — they lubricate springs. Let's look at the reasons for such diverse opinions. . . .

"Fundamentally, much depends upon the amount of interleaf friction desired.

"Trucks and trailers are seldom equipped with shock absorbers. Consequently, interleaf friction between unlubricated leaves is usually desired, to function as a shock absorber to assist the steel itself in absorbing shocks and rebounds. For trucks and trailers, lots of interleaf friction is a valued feature of these leaf springs. We think the serviceman will be wise in not lubricating such springs—unless at the definite instruction of the vehicle owner. Lubrication, of old, previously unlubricated springs, may allow them to bounce so much that breakage occurs—and then the one who lubricated them is blamed!



No deposits after 200,000 miles

Miles, Iowa

Mr. R.T. Kinneman, Manager
Standard Oil Company
Des. Moines, Iowa

Dear Sir:

I have been using your Stanolube HD and Permalube Motor Oil in my fleet of trucks for quite some time and thought you might be interested in knowing that one of my Whites (W-A-22) recently turned 200,000 miles and had never had anything done to it outside of carburetor, ignition tune-up, and one valve job.

I sent this truck to an authorized White Dealer in Davenport, Iowa for a complete motor overhaul. After tearing the motor down, I was informed by the above concern that the motor was in excellent condition. There were no deposits in the engine, all of the bearings were in excellent condition, the wrist pins, valves, valve guides, hydraulic valve lifters, timing gears and other parts were in excellent shape. There were no stuck rings and the oil control rings were clean and free.

The truck company re-assembled the engine, using a new set of rings and ground the valves.

I thought you would be interested in knowing the results obtained while using your products and knowing how well pleased I am with the performance obtained.

Yours truly,

Milo Kunau

Milo Kunau

Stanolube HD

How Stanolube HD helps fleet engines roll up record mileage between overhauls is convincingly told in the above letter from Mr. Milo Kunau, a fleet owner in Miles, Iowa.

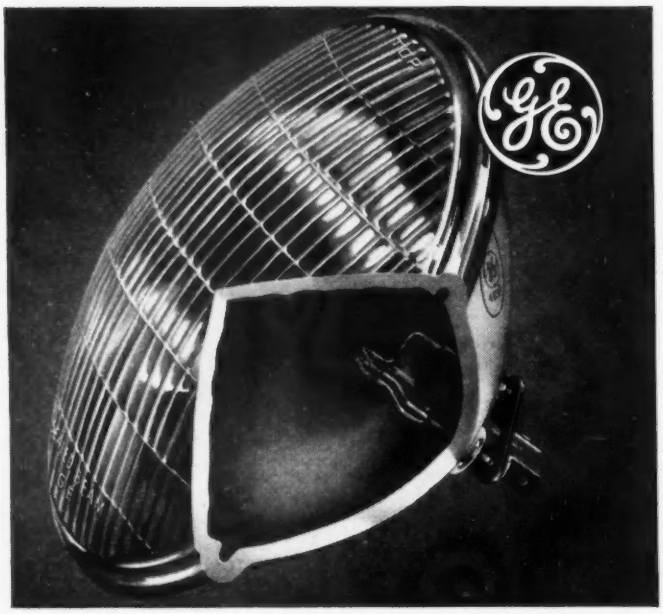
Read Mr. Kunau's letter from the point of view of your own fleet. See how Stanolube HD might solve your maintenance problem or increase your fleet operating economy. You'll find Mr. Kunau's experience with this truly heavy-duty detergent oil a good clue to lower maintenance for you. You can verify his experience by trying Stanolube HD in one of your hard-working fleet units. Write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA)

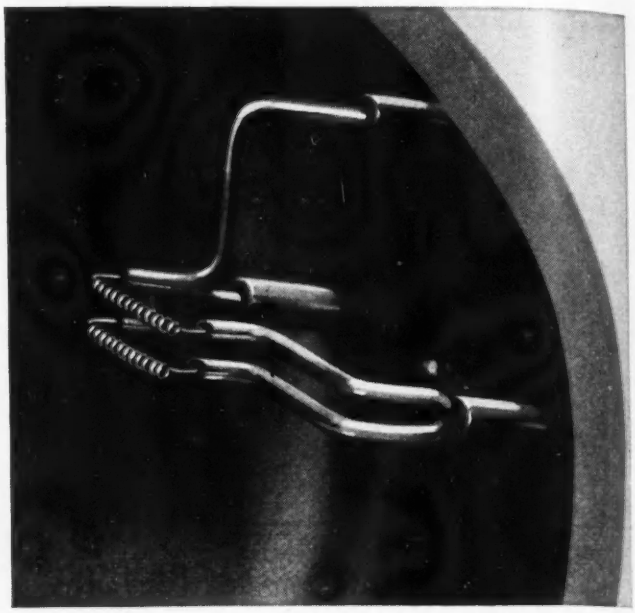
STANDARD

G-E All-glass SEALED BEAM Headlamps give you more light

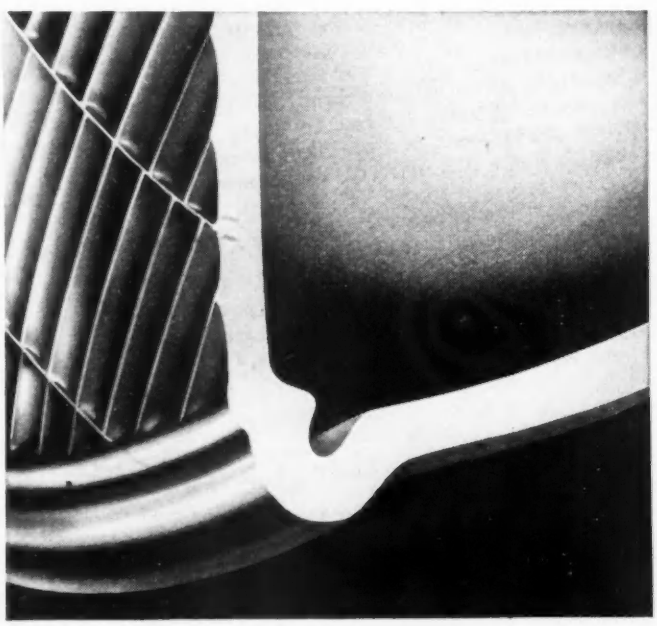
—12% more light on the road... and they do not grow dim!



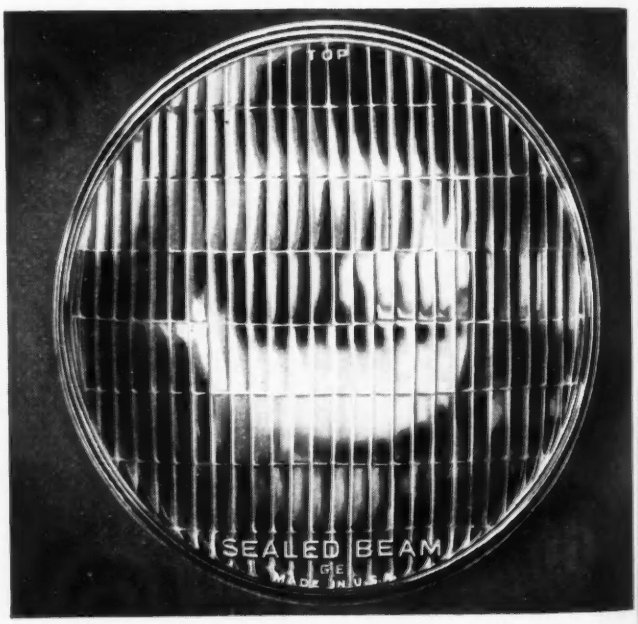
1. **TODAY'S G-E "ALL-GLASS"** sealed beam Headlamp is a rugged, one-piece bulb that gives you more light than ever. This cutaway view shows why.



2. **BIG, IMPROVED FILAMENTS** give 12% more light on the road for driving, 16% more light for passing. And they won't shake loose on bumpy roads.



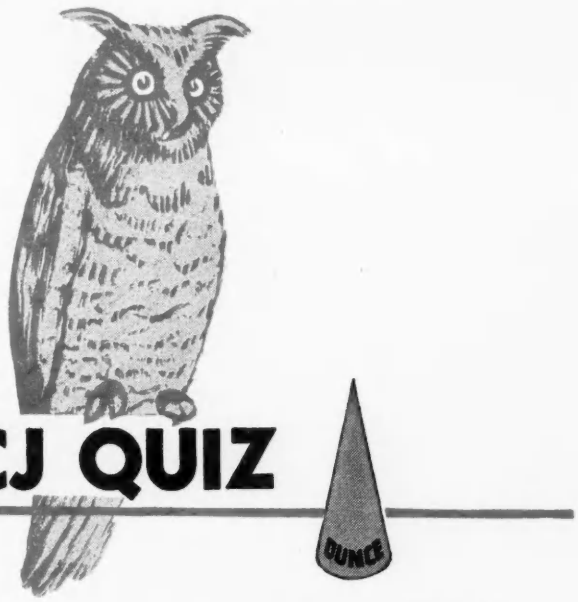
3. **THE ONE-PIECE,** all-glass construction keeps out *all* light-dimming dirt and moisture. The average G-E headlamp gives 99% of original light output even at the very end of its life. *It does not grow dim!*



4. **WEATHER-RESISTANT** hard glass lens is precision made to put maximum light on the road. These main features of a G-E headlamp assure you more light—from beginning to end. Make sure you insist on G-E!

G-E LAMPS

GENERAL ELECTRIC



CCJ QUIZ

by G. W. BAHL

Quizzes have always intrigued the writer since early school days when teacher checked our I. Q. by a list of true and false questions. Half the questions were true and the other half false so, in order to get a passing grade of 50 all one had to do was answer *all* the questions either true or false. Then one day teacher caught up with us and for a time made all the answers true or false. Those who guessed naturally flunked. You can gamble or guess on the following and most of the answers appear obvious but remember, a little knowledge is a dangerous thing. You should get seven out of ten and, if you really know the reason as explained in the answers on page 144, double your score.

1

At the time the United States reached its production of 100,000,000 motor vehicles, this total was only 55 per cent of the entire quantity produced by the entire world.

True ( ) False ( )

2

The United States exported more than 85 per cent of the motor vehicles used in the other countries of the world.

True ( ) False ( )

3

In the United States there is one vehicle to every 4 persons. On the same ratio, other countries of the world compare as follows:

a) France,
b) Russia,
c) Great Britain,
d) the rest of the world.

True ( ) False ( )

4

More than 1,500 recognized companies have entered the U. S. auto industry at one time or another—producing over 2,500 different makes of cars and trucks. Competition has narrowed the list today to less than 4 per cent.

True ( ) False ( )

5

Of the 100,000,000 U. S.-built cars and trucks only 25 per cent are still in operation today.

True ( ) False ( )

6

A horsepower is 33,000 foot pounds of work per minute. Thus, if a weight of 33,000 pounds is raised one foot off the ground in one minute, it takes one horsepower to do it. The United States produces roughly 1,670,674,000 horsepower per year. Motor vehicles produce over 85 per cent o this total.

True ( ) False ( )

7

Motor vehicles increase the world's supply of water by 17,500,000,000 gallons yearly.

True ( ) False ( )

8

The Niagara Falls has more energy available than the total gasoline consumed in the United States in one year.

True ( ) False ( )

9

Pure nitroglycerine contains more potential energy per pound than gasoline.

True ( ) False ( )

10

Air enters the carburetor on a gasoline engine at a sped almost 400 per cent faster than the vehicle is traveling.

True ( ) False ( )

JOBSERVATIONS

by Buster Rothman

Worry is stewing without doing.

You'll never succeed by letting things slide—unless you are a trombone player.

To "darn" your luck is not the best way to mend it.

Those who throw mud seldom have clean hands.

The fellow who pulls his own weight doesn't throw it around.

DRIVE SLOWGANS

by Buster Rothman

Don't be the defective part of your truck.

Don't let death take your holiday.

Give the kids a brake.

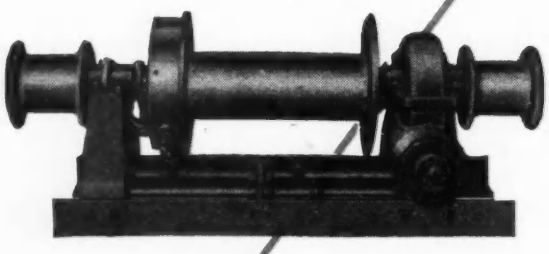
What our highways need is more wreckless driving.

A lot of drivers are just what they're cracked up to be.

These pithy slogans are worth their weight in gold if used properly in the fleet field. We suggest that these messages be reproduced in large type—on the blackboard or on the shop bulletin board—or used in letters and news bulletins to employees.

For PULLING

THE JOB'S A CINCH WITH TULSA WINCH



Tulsa Winches available for all trucks—½-ton and larger. Send for descriptive bulletin.

Whatever the job . . . large or small . . . you can depend on Tulsa Winch! Unsurpassed for safety in pulling, lifting, hoisting, hauling of tremendous loads, a Tulsa Winch will increase your truck's working capacity . . . its worth . . . many times. It will pay for itself in a short time, and will give you years of trouble-free, dependable service on all types of winching jobs.

Tulsa Winch
TULSA, OKLAHOMA DIVISION OF VICKERS Inc.

CCJ NEWSCAST

1948 HIGHWAY RECORDS

There were more cars on the highways in 1948 and the volume of travel was greater than in any preceding year, according to the year's end report by the Public Roads Administration of the Federal Works Agency.

Concurrently, H. D. Horton, president of the American Trucking Associations, Inc., has declared that the trucking industry transported more freight and operated more vehicles during 1948 than at any other time in its history. In a review of the year, he said the total number of trucks of all types now in operation is approximately 7,000,000 compared with 6,500,000 at the end of 1947. Throughout the year there was a steady growth in tonnage moved by truck. The association's truckloading index, based on the average monthly tonnage during 1938-1940 as representing 100, climbed to 229 for the first ten months of 1948, compared with a 1947 index of 206. New records were established for the index in September, when the figure was 248, and again in October, when the index rose to 255.

ANNUAL TRAILER MEETING

The annual meeting of the Truck-Trailer Manufacturers Assn. was held at Edgewater Park, Miss., Jan. 17 to 19. For a last-minute report on highlights of the meeting, see page 96 of this issue.

CHEVROLET PRICES

Prices for the 1949 Chevrolet line (see page 85), together with comparative figures for corresponding 1948 models, are given in the following table. All fleetline models have sloping "fast back" lines, while Styleline models have trunk backs.

MODEL	1949	1948	Increase
Fleetline Special 2-Door Sedan	$1,340	....	...
Fleetline Special 4-Door Sedan	1,385	....	...
Fleetline Deluxe 2-Door Sedan	1,415	1,340	75
Fleetline Deluxe 4-Door Sedan	1,460	1,395	65
Styleline Special 2-Door Sedan	1,340	1,225	115
Styleline Special 4-Door Sedan	1,385	1,280	105
Styleline Special Bus. Coupe	1,270	1,160	110
Styleline Special Sport Coupe	1,345	1,235	110
Styleline Deluxe 2-Door Sedan	1,415	1,290	125
Styleline Deluxe 4-Door Sedan	1,460	1,345	115
Styleline Deluxe Sport Coupe	1,430	1,310	120
Styleline Deluxe Convt. Coupe	1,760	1,640	120

Transportation charges, State and local taxes and optional equipment extra.

DATES AND DOINGS

FEB. 24—New York State Motor Truck Assn. Annual Dinner, Hotel Statler, New York, N.Y.

MAR. 1-2—Ohio Assn. of Commercial Haulers, Convention, Deshler-Wallick Hotel, Columbus, Ohio.

MAR. 20-22—New England Motor Carrier Safety Conference, Narragansett Hotel, Providence, R. I.

MAR. 22—New Jersey Motor Truck Assn. Annual Dinner, Hotel Essex House, Newark, J. J.

MAR. 24—Maine Truck Owners Assn., Annual Meeting, Falmouth Hotel, Portland, Maine.

MARCH 28-30—Society of Automotive Engineers National Transportation Meeting, Statler Hotel, Cleveland, Ohio.

MARCH 28-APR. 1—Short Course for Motor Vehicle Fleet Supervisors, University of Florida, Gainesville, Fla.

MAR. 29-APR. 1—Greater New York Safety Council 19th Annual Safety Convention & Exposition, Hotel Statler, New York, N. Y.

APR. 1-2—Wyoming Trucking Assn. Convention, Townsend Hotel, Casper, Wyoming.

APR. 15-16—Louisiana Motor Transport Assn. 9th Annual Convention, Washington-Youree Hotel, Shreveport, La.

MAY 9-13—Council of Safety Supervisors and Equipment and Maintenance Council, ATA, Annual Spring Meeting, Melbourne and Sheraton Hotels, St. Louis, Mo.

MAY 19—Rhode Island Truck Owners Assn. Annual Meeting, Narragansett Hotel, Providence, R. I.

MAY 19-21—Washington Motor Transport Assn. Convention & Truck Roadeo, Olympic Hotel, Seattle, Wash.

MAY 28-31—Texas Motor Transport Assn. Annual Convention, Buccaneer Hotel, Galveston, Texas.

JUNE 1-3—President's Highway Safety Conference, Departmental Auditorium, Washington, D. C.

JUNE 5-10—Society of Automotive Engineers, Summer Meeting, French Lick Springs, Ind.

OCT. 15-20—Baking Industry Exposition, Municipal Auditorium, Atlantic City, N. J.

OCT. 21-26—American Trucking Associations, Inc., Annual Convention, Hotel Statler, Boston, Mass.

SPARROW HEADS SAE

S. W. Sparrow

Stanwood W. Sparrow, vice-president in charge of engineering for Studebaker Corp., has been elected president of the Society of Automotive Engineers for 1949.

A graduate of Worcester Polytechnic Institute in 1911, he started his business career the same year with Stevens-Duryea and later joined the Metz Co., Waltham, Mass. During and subsequent to World War I he worked with the National Bureau of Standards. He joined Studebaker in 1927.

CORRECTION ON KOETHERIZING

It has been called to our attention that the caption under American Hammered's Koetherizer (piston resizing machine), page 93, January CCJ, is not correctly phrased. The Koetherizing process, as outlined in the text on this page, is performed while the piston is cold. Resizing is accomplished by means of shot striking the inside of the piston, the pattern determined by the machine. NO heat is used.

FORD SINGLE-SPEED AXLES

Single-speed rear axles are now available for series F-8 Ford trucks and will be provided shortly for F-6 conventional and c-o-e models. Previously these two series were available only with two-speed axles. In both instances the load-carrying capacity of the new single-speed axles is the same as that of the two-speed axles. Prices of the F-6 and F-8 trucks with single-speed axles are $130 and $180 respectively lower than with two-speed axles.

NEALON RESIGNS

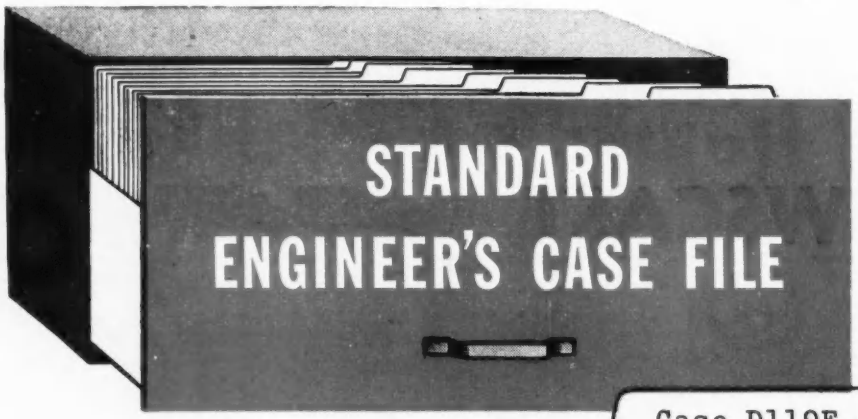
F. A. Nealon has resigned as sales manager of the Merchandising Division, Electric Auto-Lite Co. He joined the company in 1932 and was instrumental in Auto-Lite's successful entry into the spark plug field. He made no announcement of his future plans but is expected to do so shortly.

INDUSTRIAL NOTES

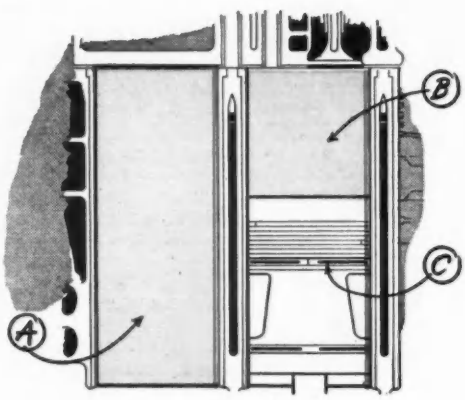
Oakite Products, Inc., New York celebrates its 40th anniversary this month. From its modest beginning in 1909 with but one cleaning chemical to offer, the company has grown to a point where it now produces 80 diversified cleaning products and employs a nation-wide technical staff of some 180 field representatives.

An informative industrial sound-movie is

(TURN TO PAGE 182, PLEASE)



Case D119E--Reducing Wear on Liners in Diesels



DIESEL ENGINE LINERS AND PISTON

In high-speed Diesel engines lubricated with RPM DELO Diesel Engine Lubricating Oil, wear on liners was held to a minimum with little variation over their entire areas. A constant lubricating film was maintained on them even in high-temperature belts. RPM DELO Oils are recommended for all types of Diesels. Come in all viscosity grades necessary for your engines.

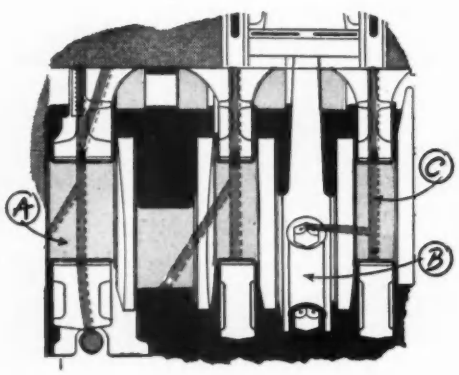
A. Special additive provides metal-adhesion qualities...keeps oil on all parts whether hot or cold, running or idle.

B. An anti-oxident resists formation of lacquer—resistance to extreme heat provides lubrication in the toughest conditions.

C. Contains detergent which keeps rings clean and operating freely...prevents scratching and gouging of liners.

RPM DELO Diesel Oil will not corrode any bearing.

Case D119F--Prolonging The Lives of Diesel Bearings



SECTION OF DIESEL ENGINE CRANK AND CAM

No bearing failures occurred between overhaul periods in Diesel engines used in the toughest service when they were lubricated with RPM DELO Diesel Engine Lubricating Oil.

A. Non-corrosive to all types of bearing metal...inherent ability of base stocks and added compound resist oxidation and formation of acid which is common cause of bearing corrosion.

B. Maintains a tough lubricating film which withstands excessive shocks and pressures.

C. Special detergent compound keeps oil passages clean and open - allows free flow of lubricant to vital points.

Another compound in RPM DELO Oil prevents foaming of the oil. An accurate measurement of crankcase levels can always be obtained.

For additional information and the name of your nearest Distributor, write

STANDARD OIL COMPANY OF CALIFORNIA

225 Bush Street, San Francisco 20, California

The California Oil Company
Barber, New Jersey

The California Company
17th and Stout Streets, Denver 1, Colo.

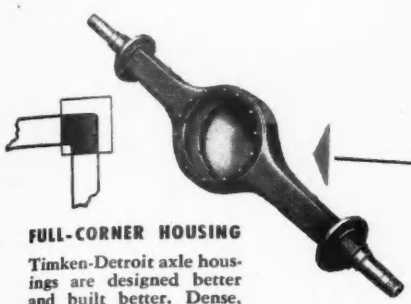
Standard Oil Company of Texas
El Paso, Texas

DIESEL ENGINE RPM DELO LUBRICATING OIL

Trademark Reg. U. S. Pat. Office

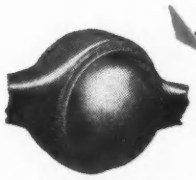
TIMKEN-DETROIT AXLES

Famous for Features like these



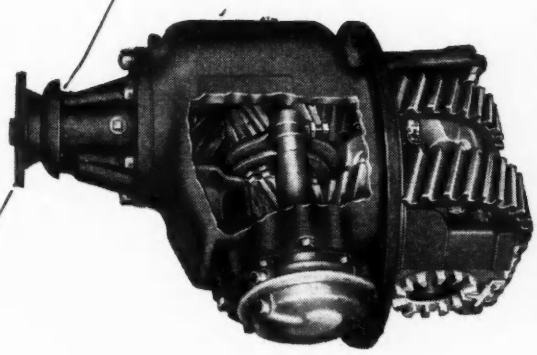
FULL-CORNER HOUSING

Timken-Detroit axle housings are designed better and built better. Dense, compacted steel and full-corner rectangular design at the spring seats give maximum strength and rigidity with minimum of weight. Because they are hot-forged (not cold-pressed) there is no stretched metal in the corners. Size for size, these are the strongest axle housings ever built.



HEAVY STEEL COVER

Welded in place, this heavy steel cover reinforces Timken-Detroit axle housings—gives still greater rigidity—helps maintain exact alignment of axle parts. Here's additional protection against play that might cause excessive wear—an additional reason why Timken-Detroit axles serve better, last longer.



SPRING-FLEX POWER SHIFT

Here's the positive spring-cushioned *power* shift for two-speed axles that's proved its dependability in years of on-the-job operation. The Spring-Flex Power Shift has no equal for split-second, *preselected* shifting without declutching—at bedrock original and maintenance costs.

TORSION-FLOW SHAFT

For each spline diameter, Timken-Detroit shafts are the strongest made. Torsion-Flow forging makes grain structure conform to shaft profile. Splines (16) are slant-sided—have an increased root diameter—are shorter for uniform distribution of twisting stresses. Graduated hardness reduction and shot-peening are the crowning touches.

Maybe you think all axles are alike. ☆ If you operate trucks, it will pay you to know today's differences between ordinary axles and *modern* axles. ☆ Four of the new Timken-Detroit Famous Features are illustrated on this page. In all, there are a score or more—making trucks perform better, require less maintenance, and last longer. Most famous of all is Timken-Detroit Hypoid Gearing, used by more and more truck buyers to measure the merit of the entire truck. ☆ Get the full story of Timken-Detroit "3 for 1" axles—write today for the new literature we have ready for you!

TRADE MARK OF RESPONSIBILITY

When you specify Timken-Detroit "3 for 1" Axles, you are getting all the benefits of more than 40 years of specialized research, development and testing by the acknowledged leader in the field of *modern* truck axles. The Timken-Detroit name is your assurance of quality and satisfaction.

TIMKEN Detroit AXLES

A PRODUCT OF THE TIMKEN-DETROIT AXLE COMPANY

DETROIT 32, MICHIGAN

The Accepted Standard

TRADE MARK REGISTERED

LAUGH IT OFF

The long distance van driver, who was also the ace pistol shot in his local gun club, was passing through a small town. Everywhere he saw evidences of the most amazing shooting. On trees, on walls, and on fences there were numberless bulls-eyes with the bullet hole in the absolute center. He asked to meet the person responsible for this great marksmanship.

The man turned out to be the village idiot.

"This is the most wonderful marksmanship I have ever seen," said the van driver. "How in the world do you do it?"

"Easy as pie," answered the village lamebrain. "I shoot first and draw the circles afterward."

CCJ

Dispatcher's Wife: "Before we were married, George, you used to give me the loveliest presents. Do you remember?"

Dispatcher: "Yes, dear, but who ever heard of a fisherman giving bait to a fish after he had caught it?"

"Wanna ride?"

Catty Cora: "What is a four-lettered word found in the bottom of bird cages?"

Safety Sadie: "Hmmm, let's see—how about 'grit'?"

Catty Cora: "Grit! Yeah, that's it. By the way, let me borrow your typewriter eraser for a minute."

CCJ

TRUCK MECHANIC: "WELL, GOODBYE, BABY, I'M GOING OUT OF TOWN FOR A FEW DAYS; WHAT'S YOUR PHONE NUMBER? I'LL CALL YOU UP WHEN I GET BACK."

NEW GIRL FRIEND: "PLAZA 4144, AND IF A MAN ANSWERS—YOU STAYED AWAY TOO LONG."

CCJ

The elderly, deaf, nightwatchman called in the company physician to examine his young wife, who complained of feeling "poorly."

Upon completion of the examination, the company medico told her husband that his wife was pregnant.

"Eh?" snorted the elderly night guard.

The doctor shouted, "I said your wife is pregnant!"

"Eh?"

Finally the doctor screamed, "Your wife is going to have a baby."

The old watchman walked to the edge of his porch, spat out a mouthful of tobacco juice and drawled, "I ain't a bit surprised. She's had every opportunity!"

CCJ

PERSONNEL MANAGER (TO YOUNG LADY APPLYING FOR STENOGRAPHIC POSITION): "YOU'LL LIKE IT HERE—THERE IS LOTS OF OPPORTUNITY FOR ADVANCES."

CCJ

Driver (on crowded bus): "Kindly shove each other to the rear of the bus, please."

The road mechanic, tired and sleepy after an all-nite session with a balky transmission job, stopped in at a glittering hamburger-heaven and ordered mud and sinkers. The long-suffering mechanic noticed that his coffee was served without a spoon.

"This coffee," he remarked pointedly to the waitress, "is going to be pretty hot to stir with my finger." A short time later the waitress returned with another cup of coffee. "Maybe this isn't so hot, sir," she said.

CCJ

Freight Handler: "If you're not doing anything tomorrow nite, I'd like to take you to a movie."

Girl Friend: "Well, I don't know."

Freight H.: "Come on, please do. We'll get a couple of seats in the balcony."

Girl F.: "Suppose we can't get seats in the balcony?"

Freight H.: "Then we'll have to watch the picture!"

CCJ

Retiring after 15 years of tooling a heavy motor transport truck up and down the highways, an old truck driver bought a well-stocked saloon, boarded it up and began to remodel it. After several weeks, residents in the neighborhood pounded on the door and asked, "When are you going to open up?"

"Open up!" hollered the ex-driver. "I'm never going to open up. I bought this place for myself!"

CCJ

HE TELLS ME HE'S SORRY FOR ALL THE THINGS HE'S DONE.

WHY SHOULD HE FEEL SORRY? I HAD A LOT OF FUN.

CCJ

Maintenance Superintendent (interviewing applicant for job): "How long did you work in the garage for U & I Haulem Company?"

Prospective Mechanic: "Sixty-five years."

Maint. Supt.: "How old are you?"

Mech: "I'm 40 years old."

M. Supt: "How could you work for sixty-five years when you are only 40 years old?"

Mech: "Overtime!"

RESUME WORK

"Don't you think that new seat is too springy?"

DELIVERED:

BONUS MILEAGE—

when your trucks roll on KELLYS!

Every trucker knows extra mileage delivers more profits . . . bigger savings in operating expenses.

That's why transportation men everywhere are switching to Kelly—the Trucker's Tire. They've found the answer to longer mileage . . . better trucking efficiency . . . lower trucking costs!

And Kellys take more recaps—*giving you more total mileage!*

Furthermore, every Kelly Truck Tire stems from the craftsmanship and skilled engineering that have characterized *all* Kellys for 55 years!

It all adds up to better business—for you!

So change to Kellys on your trucks now—and look at final mileage figures for the answer to lower costs and bigger profits!

THE KELLY-SPRINGFIELD TIRE COMPANY
CUMBERLAND, MARYLAND

Know-how makes them Better!

KELLY REGISTERED | KELLY COMMERCIAL HEAVY TREAD | KELLY DUAL TRAC | KELLY LUG TRAC | KELLY RIB TREAD | KELLY DELIVERY TRUCK TIRE

A TOUGH KELLY FOR EVERY JOB!

CCJ BULLETIN BOARD

INFLATION REVELATION

Tire Lock Rings, Like Wed Lock Rings, Should Be Approached With Caution

CARELESSNESS in tire inflation and removal is a first class ticket to the place where mechanics work on golden chariots instead of trucks—and, ironically, enough, the ride to the Gate is not supported with worldly wheels with lock rings.

Have you ever stopped a lock ring? It's a bloody engagement. What an inflated price to pay for an inflation mistake! Here's what causes those rings to take a flying trip through the air:

1. A rusted or damaged rim.
2. A battered or burred ring.
3. A sprung lock ring with gaps at the ends.
4. Wrong size or type ring.
5. Loosened lock ring caused from running on low tire.

Disregarding these warnings may mean only personal injury. (You CAN be replaced you know.) The loss of an eye may entitle you to a blind pension. And while loss of a hand may entail slight inconvenience, the accident may be financed by your insurance company.

But why be content with the questionable compensations of compensation insurance? Why not live with all your facilities and long enough to see if life begins at 40? Take 40 seconds to make the following inspections when inflating a tire:

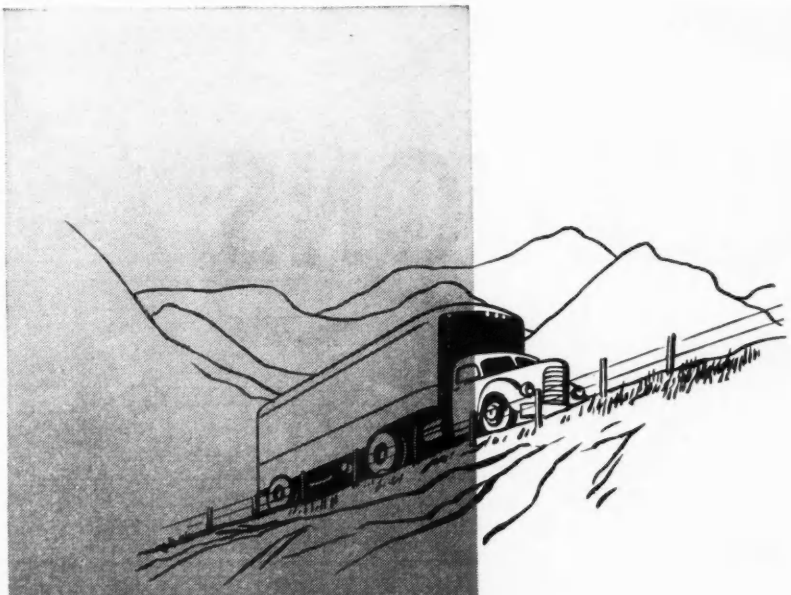
1. Inspect ring before inflating. See that it is concentric with rim flange all the way around.
2. Partially inflate to 8 to 10 lb. and stand aside.
3. Inspect ring and rim again. Then inflate WITH AIR CHUCK CLIP on valve stem.
4. Make final inspection before moving the wheel.
5. Deflate if the ring is not properly seated. DON'T use a hammer to seat it.

If you have a tire inflation guard, use it! If you don't have one, get one! Let the guard take the rap for you.

Keep your fingers out of it! Half a finger is damned little better than none. When you reach through a dual to inflate a tire, you are asking for an amputation. USE AN AIR CHUCK CLIP.

Let's cut these accidents before they cut you. Then we won't have unclaimed fingers, feet and ears lying around the shop.

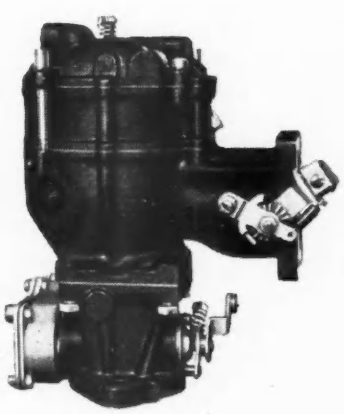
When You Inflate Tires, USE Your Head—Or You May LOSE It



Where heavy-duty carburetors
are purchased on PERFORMANCE . . .

Zenith

is the Engineers' Choice!



The prime reason most factory and maintenance engineers prefer Zenith is its smoother, better all-around performance mile after mile. They know these long-range advantages inevitably result in lower operating costs and generally greater economy. The fact that most engineers choose Zenith* to meet every heavy-duty carburetion requirement is powerful testimony that Zenith does the job best.

*REG. U.S. PAT. OFF.

ZENITH CARBURETOR DIVISION OF
696 Hart Avenue • Detroit 14, Michigan

Bendix
AVIATION CORPORATION

PUBLICATIONS

A selected list of the latest literature — catalogs, pamphlets, charts—chosen to help fleetmen improve operation and maintenance

L1. Tire Conservation

"It's the Principle of the Thing" is a new booklet issued by a well-known tire manufacturer in the interest of attaining better tire mileage. In fact the author points out how to obtain as much as 78 per cent more mileage from tires and at the same time add greater safety and better vehicle performance to driving.

The booklet gives many helpful hints useful to training programs for drivers. Such points as how to come out of a skid, how to handle fog and ice and how to set a driving "safety zone" to minimize accidents are outlined in detail.

Information on low pressure tires is included as well. Write L1 on the free postcard for a copy of this driver training material.

L2. Cooling System

This is a reference guide which should be in the files of every fleet. It is a 16-page manual on cooling system maintenance prepared to aid the vehicle operator in obtaining better engine performance with better serviced cooling systems.

A glance at the chapter headings will show readers how this publication can be of use to them. Topics cover: general information about cooling systems, the origin of insulating deposits, automotive radiator cleaners in general, service hints for cleaning cooling systems, how metals corrode, operator savings through clean cooling systems, etc.

This booklet has just been revised and brought up to date. It is available for the writing of L2 on the free postcard.

L3. Engine Governors

"Control," a magazine of power regulation, contains a discussion of governors for all types of internal combustion engines. This new issue should be of great value to fleetmen for reference information.

The publication presents some typical installations of the four major types of governors: constant speed, full range, automotive type diesel, and road speed governors. The basic function of centrifugal governor operation is outlined in detail.

For a copy of this technical approach to governors and the problem of power regulation write L3 on the free postcard.

L4. Decal Calendar

To demonstrate the practicality of decalcomanias and their value as point-of-sale eye-catchers, functional decals for application on office desks and equipment are being offered to the fleet field.

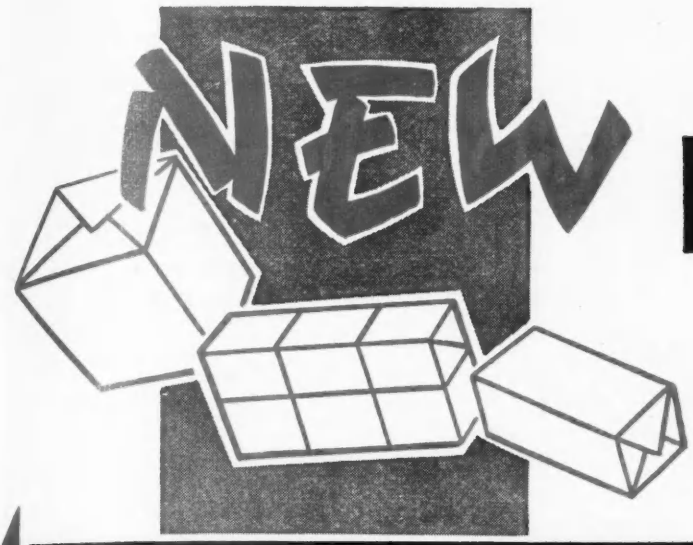
Available in limited quantities at no cost is a practical combination decal 12 in. in length, combining a 1949 calendar, linear and pica rulers. Attractively designed in color, the decal may be easily applied to desk tops, walls or other convenient locations.

Write L4 on the postcard for samples.

L5. Hypoid Gearing

A new, easy-to-read booklet on hypoid gearing, containing practical information for the fleetman is now available. This 20-page booklet in a question-and-answer presentation covers such subjects as: What is hypoid gearing? What is the principal advantage of hypoid gearing? Of what advantage is a larger diameter pinion? And many others in accurate and concise fashion.

Packed with photographs and drawings to illustrate principles of operation, this publication should be welcomed by men desiring authentic information on the subject. Write L5 on the free postcard for a copy.



PRODUCTS

USE POSTCARD FOR MORE DETAILS

Illustrating and reviewing briefly newest developments in parts, accessories, shop equipment and tools. For more information mail free postcard

P142. Heavy-Duty Filter

A new fuel filtering device for either gasoline or diesel trucks consists of a heavy-duty filter using Chemistone, a controlled porosity element. Element is housed in a full-visibility grit-retainer cup capped with a leakproof seal. It is easy to install and clean and no tools are needed for either process.

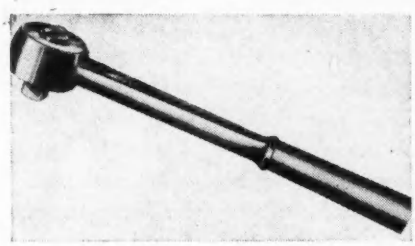
Height of the filter is 6 in.; diameter is 3½ in., and inlet and outlet are ¼ in. The Klemm Automotive Products Co., Chicago.

P143. Power Ram

The Step-Draulic power ram, available in seven models from 2 to 12-ton capacities, is operated by foot pressure, freeing both hands for setting up and operating. With available accessories, the ram will bend, press, lift, or force in any direction. It is recommended for body and frame work. Other features include a long stroke in proportion to overall length, large base area, steel construction with case-hardened plunger and spacing anvils. J. O. Stephenson Foundry & Mfg. Co., Detroit, Mich.

P144. Reversible Ratchet

A new reversible ratchet combines the advantages of both a free-wheeling type and a tooth type ratchet.



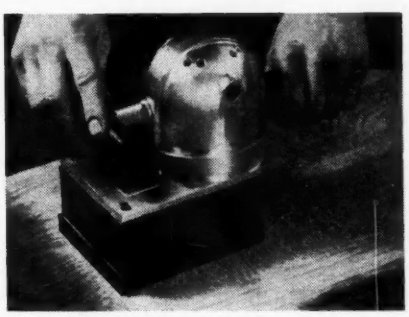
Free movement achieved with this new principle results in practically no drag in reverse. Mechanic does not have to hold the socket with one hand to prevent its being dragged backwards when ratcheting. Streamlined in design, ratchet is easy to disassemble for cleaning. Bonney Forge & Tool Works, Allentown, Pa.

P145. Distributor Tester

The "King" Distributor Tester, D-5, has a new convenient roll chart that supplies distributor specifications on all makes of cars for the past 11 years. Adapters are supplied to accommodate all distributors including 1948 models. The D-5 is also equipped with an adjustable working light. Stainless steel metal trim is used which improves appearance. The Electric Heat Control Co., Cleveland, Ohio.

P146. Oscillating Sander

This oscillating type sander produces a circular cutting at the leading edge of the pad, gradually changing



to a reciprocating action at the trailing edge. The forward edge gives fast stock removal by sanding against the grain, while the trailing edge produces a smooth finish by sanding with the grain. All gearing is eliminated, and practically all service can be performed by the user.

A new method of clamping the paper eliminates clamping at the ends.

(TURN TO PAGE 52, PLEASE)

Fleet operators find THE ECONOMY OF

QUALITY pays in nine ways

REDUCED WEAR • FEWER REPAIRS • CLEANER ENGINES
LESS VALVE OR RING STICKING • EASIER STARTING • NO BEARING CORROSION
LESS OIL CONSUMPTION • LONGER OIL LIFE • LONGER BATTERY LIFE

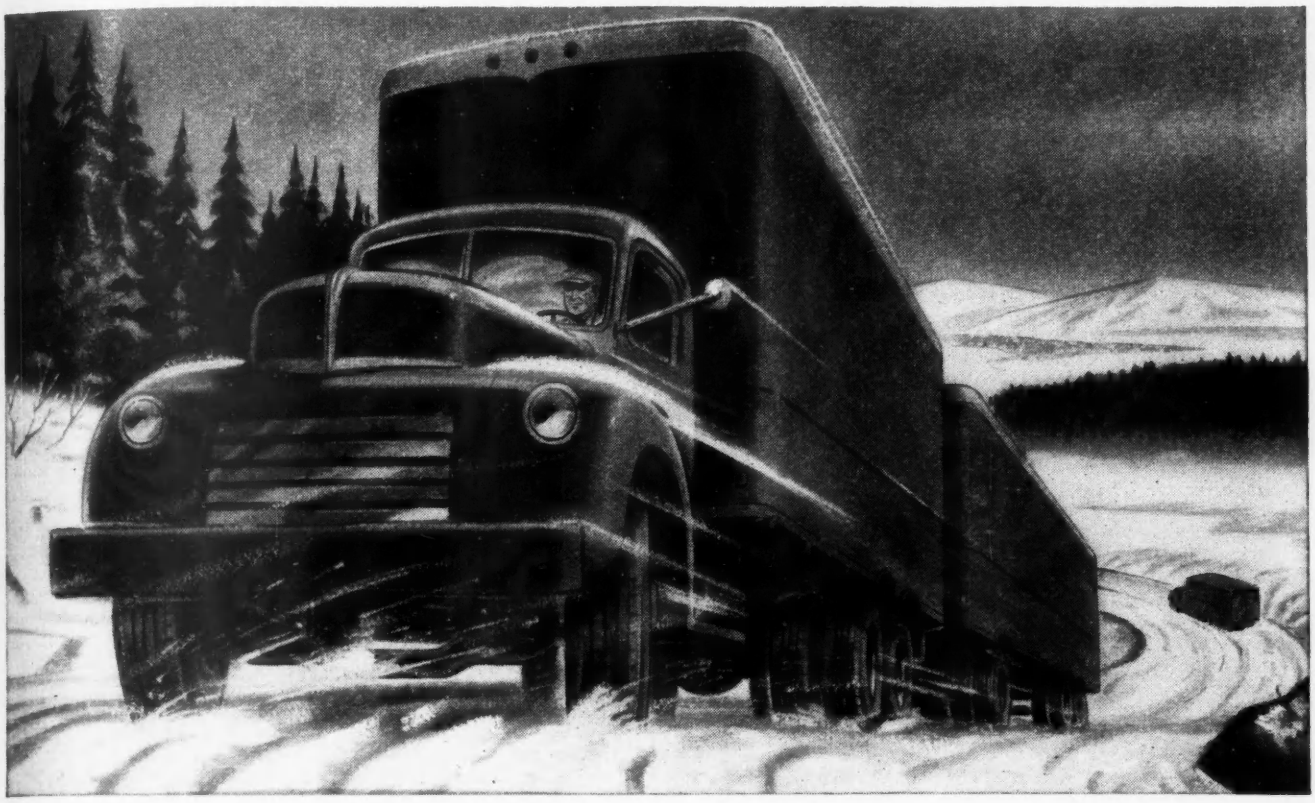
KENDALL F-L OIL
is a heavy duty oil with strong dispersant properties for units operating under severe conditions. Bears unconditional approval of both the Caterpillar Tractor Company and the General Motors Corporation for lubrication of their Diesel engines. Approved under U. S. Army Specification 2-104B.

ALL KENDALL LUBRICANTS
are refined or compounded from a base of 100% Bradford, Pennsylvania Crude by special Kendall processes including three used by no other Pennsylvania refiner. It is dewaxed to flow freely at zero. Its natural oxidation stability and detergency are fortified by carefully selected additives.

Kendall Refining Company, Bradford, Pennsylvania

PRODUCTS OF AN INDEPENDENT REFINER • SOLD BY INDEPENDENT DISTRIBUTORS

WHEN THE JOB IS *Tough*



ROSS BRINGS EASE . . . AND ECONOMY

OVER ANY ROAD, in any weather—no matter how heavy the load—Ross gives you easier, safer and more economical steering. For every type of heavy-duty service, Ross steering will please and satisfy you.

Experience gained through the use of Ross steering gears on military vehicles during world war II has led to current improvements in Ross design, resulting in: (1) *Increased mechanical reduction . . .* (2) *More compactness of design . . .* (3) *Reduction in weight . . .* (4) *Greater arm angular-travel . . .* (5) *Improved metallurgy . . .* (6) *Increased efficiency.*

Throughout 42 years of leadership in this industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of safety, stability and performance. We invite discussion of any steering problem.

Ross

Cam & Lever ***STEERING***

ROSS GEAR AND TOOL COMPANY • LAFAYETTE, INDIANA

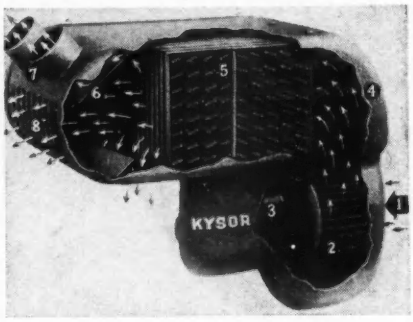
PRODUCTS

Continued From Page 49

P147. Truck Cab Heater

A truck cab hot water heater, capable of producing 25,000 BTU per hour, delivers in excess of 200 cu ft of air per min. Designed to provide an "all fresh air" intake, its capacity is such as to deliver more than sufficient heat at sub-zero temperatures.

Large copper core 6 in. in length, (No. 5) is so constructed as to provide maximum heat transfer with minimum air restriction. Fresh air intake (No. 1) is in blower housing. Fresh air is drawn from the outside by the Sirocco blower and is forced through heater core to the heater (No. 8) and defrosted outlets (No. 7) under pressure. Pressurized heating and defrosting is completely controlled. Modulating type water valve with Boden wire control is accessible to the driver to regulate temperature output. Rheostat switch



controls air volume output while a defroster control is provided at No. 7.

Housing is made of cast aluminum (No. 4) and heavy gage sheet metal. Impeller (No. 2) is driven by a General Electric ball bearing motor (No. 3) of 1/25 hp. Kysor Heater Co., Cadillac, Michigan.

P148. Trailer Topping

A non-metal roofing material of heavy mastic, known as "Trailer Topping," is applied by spraying from high pressure air spray guns directly over a Masonite or similar type of base.

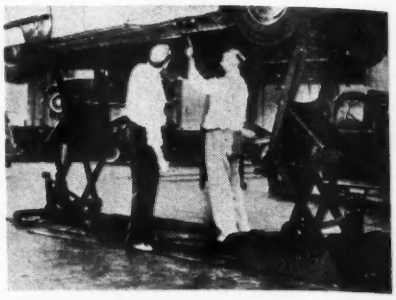
Advantage of this roof is its high resistance to cracks and leaks. Trailer Topping remains pliable so that it tends not to be affected by the ordinary structural movements of the vehicle, by the weather, or by normal extremes of temperature. At the same time it is dry and tough and may even be walked upon.

Simplicity of application is an advantage claimed for the material. With a pressed fibre board base, all that is necessary is to caulk and membrane the joints and spray a 1/8 in. thick blanket over the fibre board. An aluminum spray is then applied over this for a bright, attractive finish.

Manufactured by the Insul-Mastic Corp. of America, Pittsburgh, Pa.

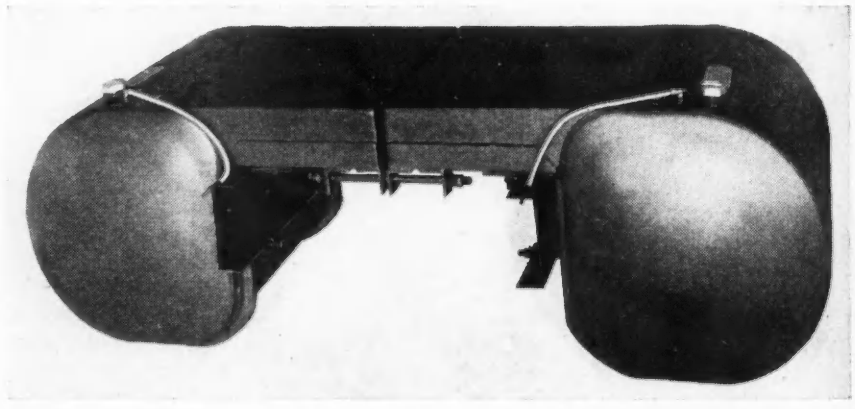
P149. Twin Floor Lift

This space-saving twin floor portable lift is electrically-operated (full hydraulic) and handles all cars and light trucks. The lift is adjustable to wheelbase length through a traveling wheel chuck carriage. It is quickly installed on any type floor.



The hydraulic power unit has a capacity sufficient to power a battery of 1 to 6 lifts. Controls are designed to provide both simplicity and safety. A safety factor of more than twice the rated capacity is built into the lift. Automatic controls stop the lift when top of vehicle is within a predetermined distance from an overhead obstruction. A feature of this type lift is the fact that it requires a minimum of floor space, allowing more room for working and vehicle storing. Weaver Mfg. Co., Springfield, Ill.

P150. Heavy Duty Safety Tanks

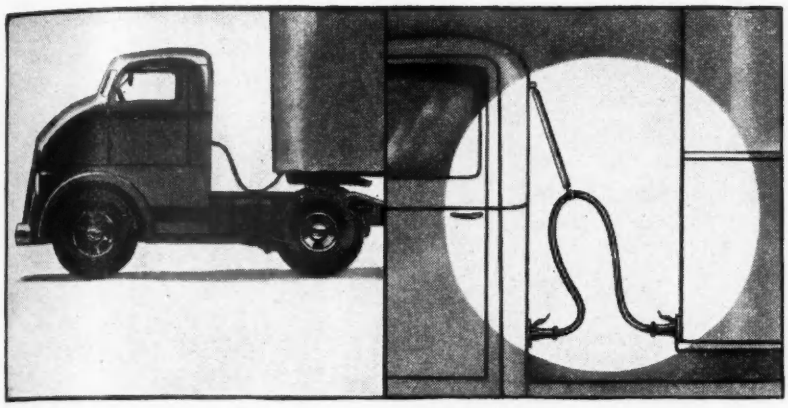


"Mileage Master," heavy-duty safety gasoline tanks come in three sizes—120, 135 and 150 gal.—yet overall lengths are only 27, 30 and 33 in. This is a substantial capacity increase over previous tanks by this manufacturer and enables the truck operator to extend mileage even though still filling up "at home." The increase in capacity is largely brought about by extending the tank across the top of the truck frame under the non-skid cat walk.

The two main tanks are OB-Round, hug the frame closely and stay well inside the line of the tires. Installation is simpler-than-ever. There are no holes to drill nor is any welding necessary. Tanks are attached to the truck frame by clamps, adjustable to all frame widths, without drilling or welding. The two tanks are completely separated from each other, relieving torque stresses and permitting individual replacement in event of collision. Eight points of suspension reduce the strain from vibration and torque. They are listed with Underwriters Laboratories Re-Examination Service—Prior Products, Inc., Dallas, Tex., and Middletown, Ohio.

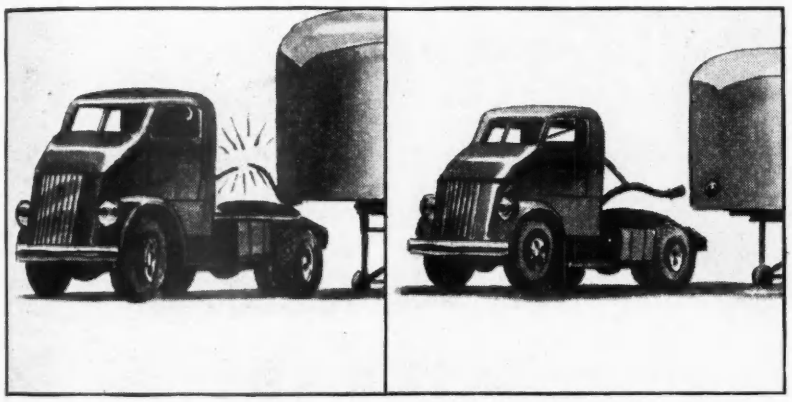
(Turn to page 56, please)

How to stop all your trailer cable and electrical connection troubles..



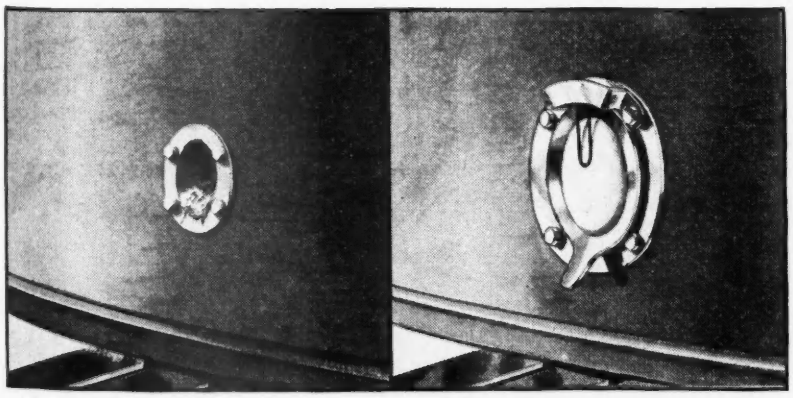
TROUBLE: Ice, mud, gravel, etc., batter flimsy cables; extremely sharp turns may cause kinking; insulation rots and frays.

SOLVED: Warner Cables are built for heavy duty work and will withstand all road hazards.



TROUBLE: If driver forgets to unfasten permanent type cable connections when uncoupling, cable will break.

SOLVED: Single cable plug-in feature of Warner kits permits plug to pull free of trailer when such tension is applied. Works like any home light cord.



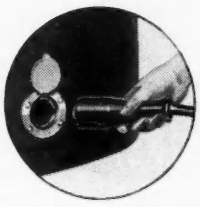
TROUBLE: Ordinary plug-in receptacles become fouled with road dirt, snow, etc.—give poor contact or are useless unless thoroughly cleaned.

SOLVED: Warner "Dreadnaught" receptacles have spring-operated, self-sealing covers. No dust, mud, dirt, snow, etc., may enter.

ANSWER: STANDARDIZE ON WARNER "DREADNAUGHT" ELECTRIC CABLE AND CONNECTION KITS

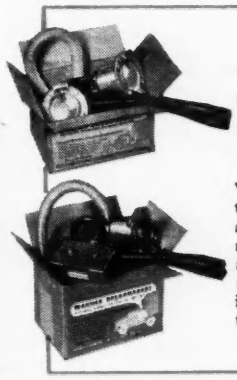
WARNER "Dreadnaught" Electric Cable and Connections are heavily insulated and ruggedly built for years of long wear regardless of weather or road conditions. No more worries that your trailer parking, running or stop lights will black-out. Single cable design eliminates complicated wiring connections and systems.

Warner "Dreadnaught" kits are made to fit all types of trailer-tractor hook-ups. For complete information see your nearest WARNER dealer . . . or write WARNER ELECTRIC BRAKE MANUFACTURING COMPANY, Beloit, Wisconsin.



FAST HOOK-UP . . . PLUG IN LIKE A RADIO

No fuss or bother when you use a Warner "Dreadnaught" system . . . simply plug in cable as you would a radio. Special long-contact, knife and clip design assure positive electric contact and snug, firm fit.



WARNER "DREADNAUGHT" ELECTRIC CABLE AND CONNECTION KITS . . . COMPLETE — EASILY INSTALLED

Warner "Dreadnaught" Electric Cable and Connection kits are available in double-plug or single box-terminal and plug arrangements. Each kit complete and ready to install. Full instructions supplied . . . easy to install yourself.

WARNER
THE ORIGINAL AND PROVEN
ELECTRIC BRAKES
SINCE 1927

It's on with a *Splash*

...it's OFF in a flash

...when Trico's "Two Little Squirts" wash your windshield

● Every truck and bus 'shield is a splash target when thaws and rains make a mud pie of late winter's highways.

But with a Trico Automatic Windshield Washer, a quick touch of a button clears the glass of blinding road mist and grime.

Thousands of trucks and buses now equipped with the "Two Little Squirts" operate more safely and with less strain on the drivers.

Trico Washers can be quickly installed on nearly all types of trucks or buses, old or new. More than *three million* now in automotive use.

Fully automatic . . . Nothing to pump

TRICO PRODUCTS CORPORATION, BUFFALO 3, N. Y.

Windshield Washers

OLSON of Green Bay, Wisconsin...Saves Two Ways with BROWN Refrigerated Units

1 BROWN REFRIGERATION FOR PAY-LOAD PROTECTION

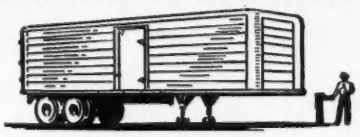
Hauling perishables with Browns means positive protection on *any* haul, because:

Over-all insulation . . . Side and top—3" layer of fire-resistant, non-absorbent cotton that remains lightweight under all climatic conditions.

Natural reflective qualities of aluminum increases insulation efficiency at the outer surface.

Brown's exclusive construction provides protective baffles between skin and liner which prevent any metal-to-metal contact and block transmission of heat or cold.

2 LESS TRAILER WEIGHT FOR MORE PAY-FREIGHT



Browns are made of lightweight aluminum alloy throughout. Monocoque, frameless, airplane-type construction provides minimum trailer weight, maximum strength and the ability to carry greater payloads. Sturdy, simple, sectional assembly reduces maintenance and service cost to a miminum — less than required by conventional trailers.

"The Scale Tells the Tale"

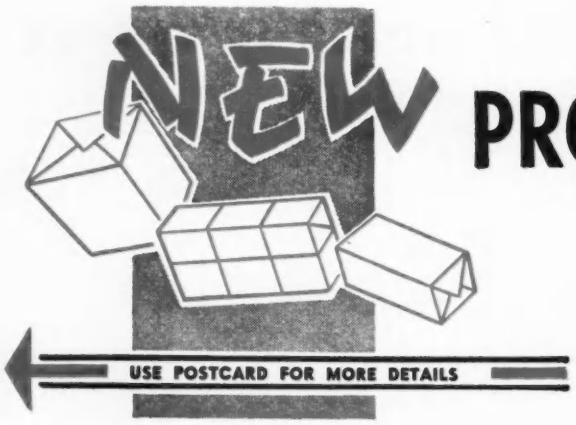
The Brown lightweight aluminum trailer is the result of twenty-five years of aluminum fabrication experience. It is this "know-how" which enables Brown to save as much as 30% in Trailer weight. Haulers all over the country are realizing greater operating profits by standardizing their fleets on Brown lightweight aluminum trailers.

A coast-to-coast network of carefully selected independent distributors has been established to serve new and old Brown customers. Ask them for performance facts.

Brown ALUMINUM TRAILERS

BROWN TRAILERS, INC.
Spokane, Washington • Toledo, Ohio

Sales and Service in: Akron, Chicago, Cincinnati, Cleveland, Denver, Fort Worth-Dallas, Fresno-Sacramento, Great Falls, Indianapolis, Jacksonville, Kansas City, Los Angeles, Milwaukee, Minneapolis-St. Paul, Omaha, Portland, Richmond, St. Louis, Salt Lake City, San Francisco, Seattle, Spokane.



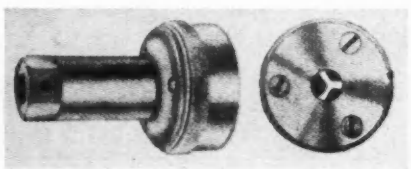
PRODUCTS

Continued From Page 52

An adhesive holds the paper firmly yet it can be peeled off easily. Sanding surface is 4½ x 5½ in. A universal motor for ac or dc operates on 60-cycle current and is fan-cooled. Weight of the sander is 7½ lb. Skilsaw, Inc., Chicago, Ill.

P151. Stud Puller

A new stud puller with a capacity of ¼ in. to ½ in., built in one unit, has no collets, wedges, or other parts



needed to adjust it to different sizes of studs in its size range. Three jaws automatically close to stud size and grip when pressure is applied. Thus a "built-in" ratchet action is provided for operation in close quarters.

The tool is 3½ in. high. Simple construction makes it easy to take apart should cleaning and oiling be necessary. Snap-On Tools Corp., Kenosha, Wis.

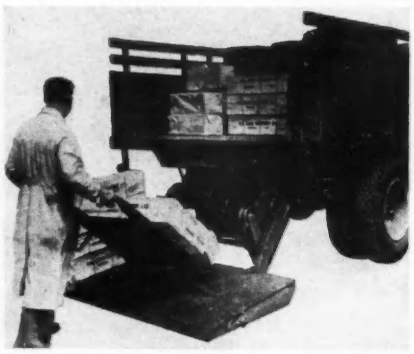
P152. Electric Lift

The new Walker electric lift features extra side beam spacing, full working height and low-cost operation. A spacing of 32 in. between the long support arms provides better accessibility to all under-body parts. Either drive-on or free-wheel types are available. The unit is portable and can be installed anywhere. Its capacity is 7500 lb. and it accommodates cars and light trucks up to 150-in. wheelbase. Walker Mfg. Co., Racine, Wis.

P153. Hydraulic Tailgate

An elevating tailgate for trucks called the Tailgate Loader, has 2000 lb capacity and will fit any new or old truck of 1½ tons or larger. It eliminates work strain, injury and fatigue from manual loading and speeds loading operations.

The gate is raised and lowered hydraulically as well as opened and closed hydraulically by controls at the rear of truck. Controls are mounted in such a position that they



are handy from the ground level or from the truck floor. Entire tailgate assembly is hung on the chassis members with two steel triangular plates bolted to the chassis. Phil Wood Industries, Ltd., Windsor, Ontario.

P154—Pneumatic Sander

For sanding, grinding and feather-edging, the 4-in. disk of this pneumatic sander gets at hard-to-reach places. Weighing less than 4 lb the unit requires only 60 lb of air pressure. It features a quick change of abrasives. Operation speed is set at 10,000 rpm. Watervliet Tool Co., Inc., Albany, N. Y.

P155. Fleet Washer

This fountain brush incorporates a compartment, or container, for cleaning pellets and a valve in the head of the washer which directs clear rinse water through the brush for rinsing. Device is so arranged that the operator, by turning the valve, can have

clear water only, cleaning solution only, or shut off everything.

The handle consists of a hollow aluminum tube with a small high-pressure hose running through the center, preventing the operator's hands from getting cold. It is made in three sizes giving brush diameters of 5, 6 and 6¾ in. Tucker Mfg. Co., Inc., Cedar Rapids, Iowa.

P156. Compression Tester

A new compression tester, the "King" AG-30, has an aluminum handle made on an angle which makes it easy to use on the hard-to-get-at cylinders of the modern cars. It also has a universal adapter and fits all spark plugs. The pistol grip handle is designed to fit the hand and makes it easier to use on the new high compression engines. The Electric Heat Control Co., Cleveland, Ohio.

P156a. Impact Wrench

The Thor ⅜-in. Universal Electric Impact Wrench is a well-balanced, lightweight tool, weighing slightly over six lb. It has a positive drive, high torque, negligible torque reaction, smooth operation, simplicity, compact design.

Wrench has a highly polished die casting case, a free speed, forward or reverse, of 2150 rpm. It strikes 2000 blows per minute; operates on ac-dc—60 cycles; weighs 6 lb 14 oz; employs a ½-in. square spindle drive with a 1 7/16-in. spindle offset. Independent Pneumatic Tool Co., Aurora, Ill.

(Turn to page 184, please)

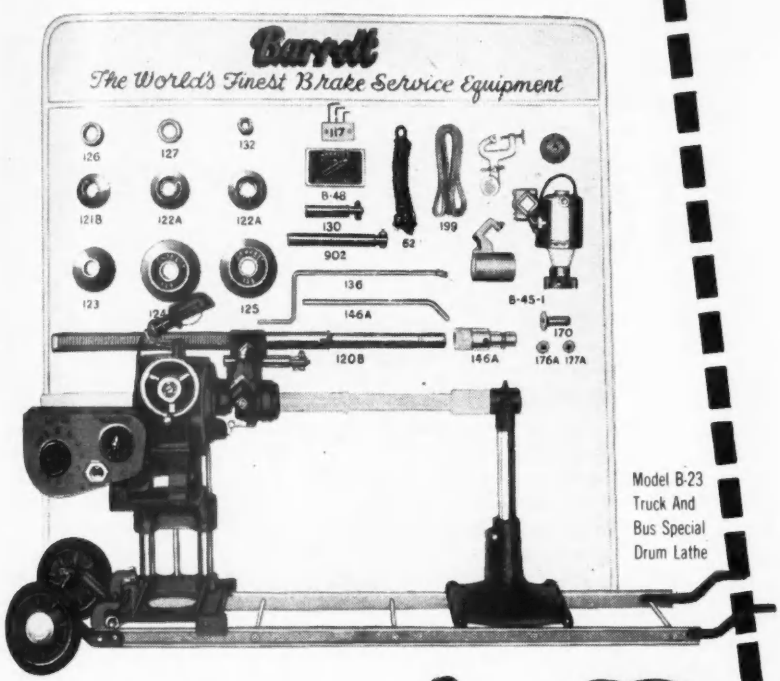
Barrett Says:

SIMPLIFY YOUR BRAKE PROBLEMS!

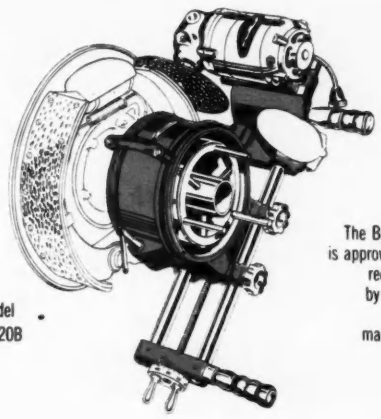
LET *US* DEMONSTRATE AND PROVE THAT YOUR MAINTENANCE COSTS CAN BE REDUCED

Barrett is the *ONLY* Brake Drum Lathe that provides spot service throughout your shop.

The Brake Dokter is the *ONLY* way to insure safe, perfect brakes.



Model B-23 Truck And Bus Special Drum Lathe



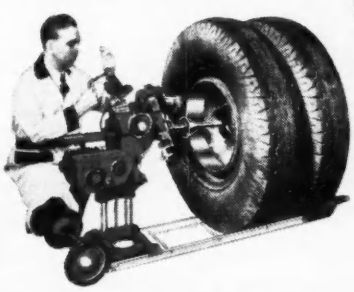
Model B-120B

The Brake Dokter is approved, used or recommended by all car, bus and truck manufacturers.

THE BARRETT BRAKE DOKTER:

- insures longer lining life
- lowers brake operating temperatures
- holds heat checking to a minimum
- corrects faults caused by bent, warped or improperly adjusted brakes
- grinds lining to perfect drum arc in actual operating position
- prevents side-pull, grabbing, diving
- reduces drum failure
- eliminates squeaks, groans, chatter and other brake noises
- makes wear-in period and early second adjustment unnecessary
- requires only one mechanic to operate
- reduces brake service labor hours
- handles all brake assemblies, 9" to 24" diameter

COMPLETELY PORTABLE! NO LIFTING OR DEMOUNTING WHEELS!



The only Brake Drum Lathe that will handle all Bus, Truck and Earth Mover wheels regardless of size and weight without removing tires or wheels from the hub. Machines them wherever they are—a one-man job. Hoists or chain falls are eliminated—the operator need not lift wheels off the floor because the lathe shaft does not support weight of wheels. No matter what the size of the brake drum—7½" to 24" diameter, over 10" face—the Barrett Lathe takes care of them all.

Don't be fooled by the size of the drum and the lathe—the function of the lathe is ONLY to machine metal from the drum. Barrett Lathes are powered by a 110-volt AC-DC universal motor, rheostat controlled, that enables the lathe to operate in any location with plenty of power to spare.

GET SAFER, MORE EFFECTIVE BRAKES AT LOWER COST-PER-MILE WITH THE BRAKE DOKTER

Return Coupon Today!

BARRETT EQUIPMENT CO.
21st & Cass, St. Louis 6, Mo.

Date_____

☐ Send complete information on Barrett Lathe and Brake Dokter as advertised for bus and truck use

☐ We would like a demonstration of the Barrett Lathe and Brake Dokter

Company_____

Address_____

City & State_____

Signed_____

BARRETT EQUIPMENT CO.
TWENTY-FIRST AND CASS • ST. LOUIS 6, MO.
The World's Finest Brake Service Equipment

SPEED

— to clear at 20-30 mph.

— to throw snow off the road

— to clear more miles per hour

STAMINA

— to operate on 24-hour schedules

— to buck thru deepest drifts

— to cut down high windrows

WALTER SNOW FIGHTERS, with their great speed, power and traction, not only open your roads fast —but they have the ruggedness and reserve ability to keep battling without fail, day and night, until the job is done. This Walter dependability is vital in winter emergencies where life and property are at stake.

Walter Snow Fighters clear faster because of their great engine power (240-250 hp.) and the unfailing 100% traction of the Four-Point Positive Drive. This provides maximum plowing speeds for pouring snow, opening drifts or travelling slippery surfaces and grades, without side-slipping, wheel spinning or stalling.

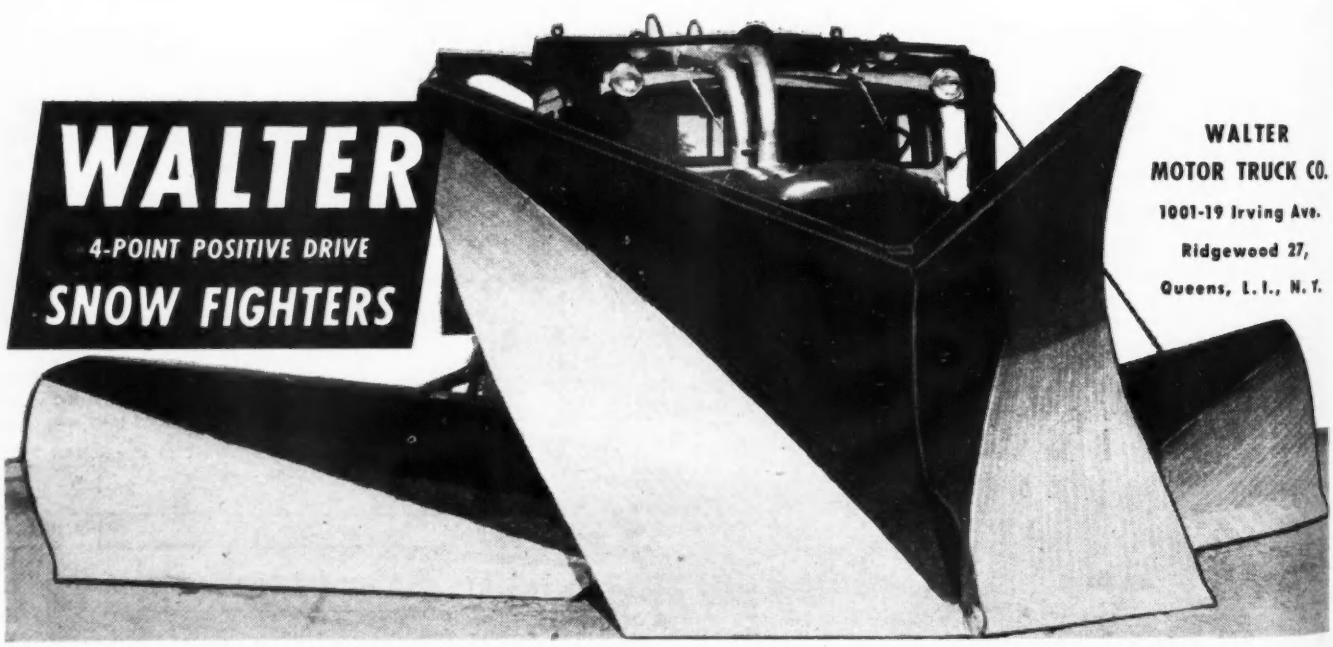
The ruggedness of Walter Snow Fighters results from their special, scientific construction for snow removal, including larger gear capacity, tractor type transmission, powerful chassis, high-capacity plows and wings, special hydraulic controls and other accessories essential to efficient,safe snow fighting under all possible conditions.

Ask your Walter distributor for the facts — or write us for literature.

WALTER

4-POINT POSITIVE DRIVE

SNOW FIGHTERS

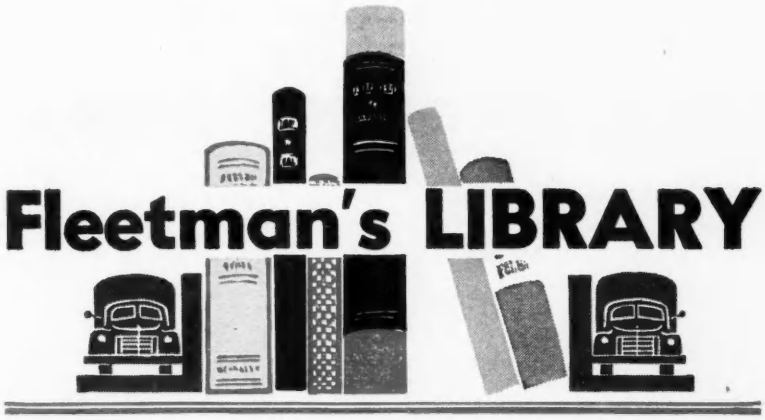


WALTER MOTOR TRUCK CO.

1001-19 Irving Ave.

Ridgewood 27,

Queens, L. I., N. Y.



A Review of Booklets and Catalogs Fleetmen Will Find Helpful

1949 DIRECTORY OF OCCUPATIONAL SAFETY POSTERS, a 72-page directory containing 744 illustrations classified under 15 sections. Posters range in size from 8½ to 11¼ in. Prepared by National Safety Council. Price 50 cents. Write the Council at 20 N. Wacker Drive, Chicago 6, Ill., for a copy.

COST-RECORD BOOK, distributed free of charge to Autocar's branches. Prepared to aid in keeping accurate and complete records of operational costs on each vehicle in the fleet. One book is supplied for each truck. The Autocar Co., Ardmore, Pa.

HOUSE TRAILER LAWS, showing trailer coach owners what registration, taxation, equipment, size, speed and license requirements must be met in each state this year. Available from National Highway Users Conference, Washington, D. C.

SOLDERING TIPS, a 20-page handbook showing "do's" and "don'ts" of soldering; explains time-saving methods, suggests solders and fluxes for various jobs and spotlights every step with cartoons. Price 10 cents. Weller Mfg. Co., Packer St., Easton, Pa.

LIGHTING AND SAFETY EQUIPMENT CATALOG, showing a complete assortment of truck reflectors, truck flares, and side-view mirrors. S. and M. Lamp Co., Los Angeles, Cal.

MAKE CEILINGS PAY DIVIDENDS, a 28-page, illustrated book showing actual installations and flexible adaptability of the overhead trolley conveyors. Link-Belt Co., 307 N. Michigan Ave., Chicago.

SOUTH BEND CATALOG, No. 73, describing 13- and 14½-in. swing South Bend precision lathes which feature a new headstock spindle with larger bore to take collets up to 1 in. maximum capacity. South Bend Lathe Works, South Bend 22, Ind.

TWECOLOG FORM N*. 7, a 12-page catalog illustrating and describing the full line of Tweco cable connections for electrical wiring. Write Tweco Products Co., P. O. Box 666, Wichita, Kan.

WALKER OIL FILTERS, a 44-page illustrated catalog showing the new features of the Walker filters and replacement cartridges. Includes 14 pages of charts to show replacements for cars, trucks, buses, etc. Walker Mfg. Co., Racine, Wis.

MAINTENANCE OF AUTOMOTIVE COOLING SYSTEMS, a revised manual describing the design, construction, function and operation of the cooling system. Shows causes and effects of malfunction and failure. Explains what to do to keep system in peak operating condition. A trouble shooting guide shows how to find and correct common troubles. Prepared by a committee of the SAE. Price is $1.00. Write SAE at 29 West 39th St., New York 18, N. Y., for a copy.

PENN DRAKE SNOW PLOW WAX, descriptive literature showing how this wax prevents snow from piling up on the plow and eliminates delays in breakdowns. Pennsylvania Refining Co., 2686 Lisbon Road, Cleveland, Ohio.

BLACKHAWK WRENCHES, a 34-page catalog illustrating and describing socket, open end and box type wrenches along with other service tools. Available from Blackhawk Mfg. Co., Milwaukee 1, Wis.

FLEXIBLE SHAFT TANK PUMP DRIVES INSTALLATION, a bulletin showing the installation, operation and maintenance of these units. Stow Mfg. Co., Binghamton, N. Y.

NONE BETTER HAND TOOLS, a 62-page catalog showing hand tools available from The New Britain Tool Co., New Britain, Conn.

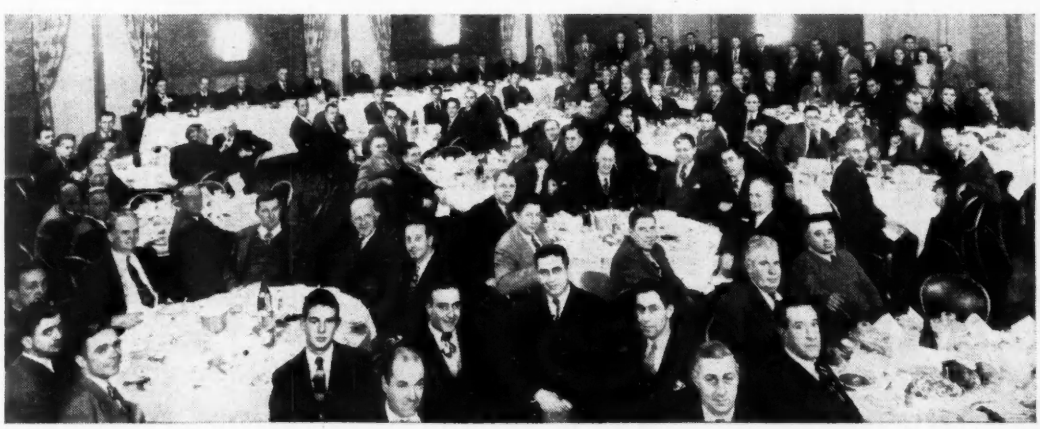
DESIGN FOR WELDING, a new book presenting a significant record of the progress of arc welding throughout all industry during the post war years. Composed of over 1000 pages, the book provides abstracts of 82 award papers in the recent Foundation "Design for Progress" Award Program. The book has been prepared with the purpose of making available a record of representative welded designs. Emphasis is placed on projects produced and in operation with the objective of providing engineers and industry with a variety of ideas which may be adaptable to their own products or structures. Profusely illustrated with photographs, drawings, tables and cost data. Price $2.00. Published by the James F. Lincoln Arc Welding Foundation, Cleveland 1, Ohio.

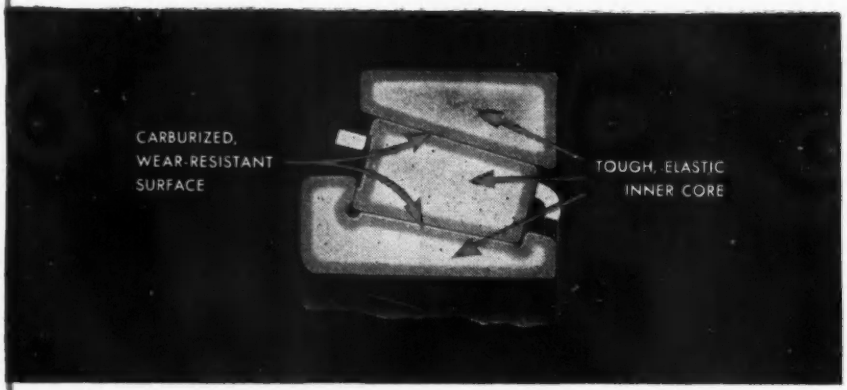
SAFETY IN WINTER DRIVING, a 16-page publication presenting results of skidding tests conducted at Clintonville, Wis., by the National Safety Council. Available from the National Safety Council, 20 N. Wacker Drive, Chicago.

THE EUTECTIC WELDER, a special issue, six-page folder showing the new electrode 24/29 in actual use throughout a variety of industries. Text provides details on how repairs are done on many welding jobs. Eutectic Welding Alloys Corp., 40 Worth St., New York 13, N. Y.

Maintenance Mess

Although organized less than a year ago, the Fleet Maintenance Association of Philadelphia played host to more than 150 guests at its bang-up first annual dinner at the Broadwood Hotel





Hard on the outside – tough on the inside

The rolls and races of Timken® bearings are made of the finest bearing material ever developed for tapered roller bearings—Timken fine alloy steel. They are case-carburized to give them a hard, wear-resistant surface, combined with a tough inner core to withstand shock.

As a result, Timken tapered roller bearings provide maximum load-carrying capacity, hold shafts in rigid alignment, maintain precision, and normally last the life of the machine in which they are used. They are first choice with truck and trailer manufacturers everywhere.

Another reason why TIMKEN® bearings are first choice with truck manufacturers

SINCE THEY'RE BEST WHEN THE TRUCK IS NEW . . . . THEY'RE BEST FOR REPLACEMENT, TOO!

TIMKEN TAPERED ROLLER BEARINGS are the only bearings which give you all these advantages: 1) advanced design; 2) precision manufacture; 3) rigid quality control; 4) special analysis steels. That's why it always pays to look for the trade-mark "Timken" on every tapered roller bearing you buy. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS

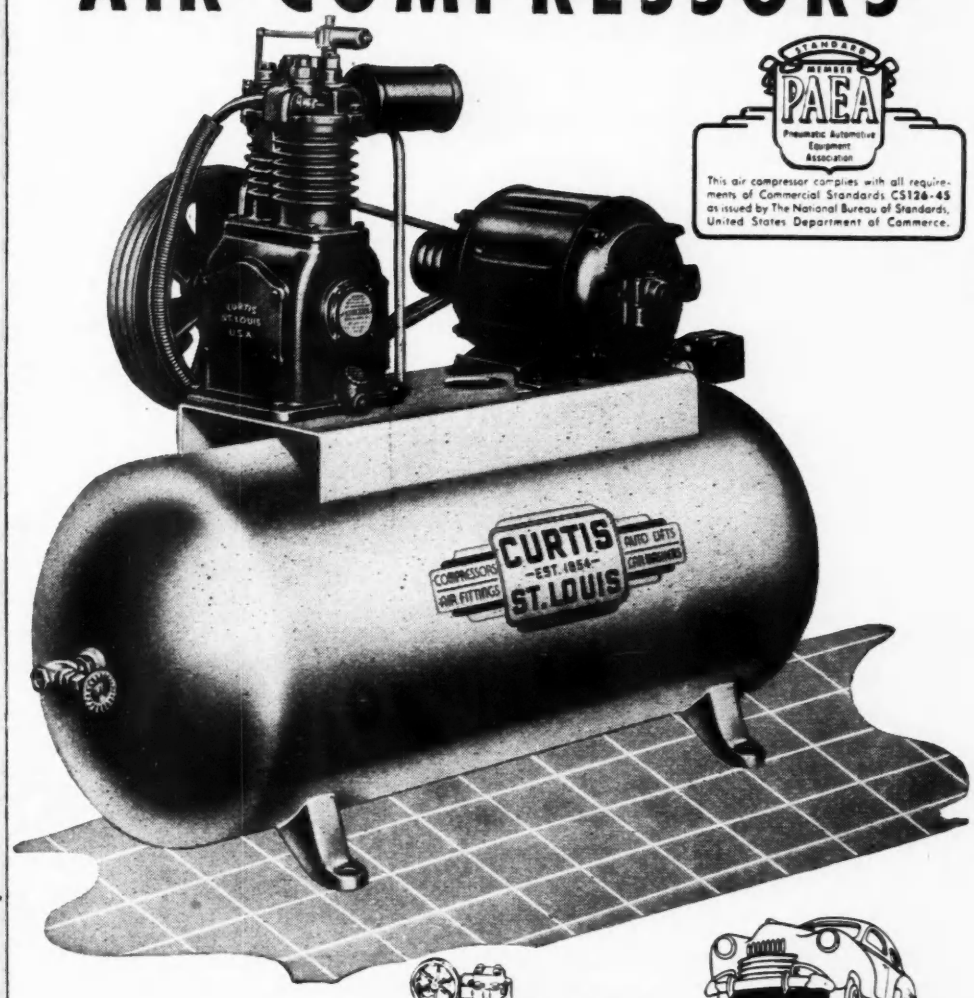
NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◫ AND THRUST →◫← LOADS OR ANY COMBINATION →✳←

Wise Buyers Purchase . . .

here's why:

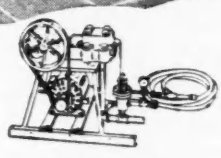
1. Precision construction throughout
2. Timken Bearings
3. Self-Oiling
4. Centrifugal unloader gives positive unloaded starting
5. Enclosed Design—Slow speed
6. Finned copper intercooler
7. High and low level oil gauge
8. Fan flywheel
9. Tank—deep penetrating welds

CURTIS
AIR COMPRESSORS

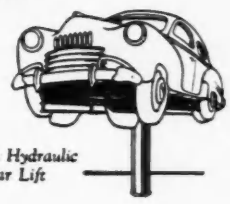


STANDARDS MEMBER PAEA Pneumatic Automotive Equipment Association

This air compressor complies with all requirements of Commercial Standards CS126-45 as issued by The National Bureau of Standards, United States Department of Commerce.



Curtis Hydraulic Car Washer



Curtis Hydraulic Car Lift

CURTIS

PNEUMATIC MACHINERY DIVISION
of Curtis Manufacturing Company
1970 Kienlen Avenue • • St. Louis 20, Missouri

95 Years of Precision Manufacturing

CURTIS PNEUMATIC MACHINERY DIVISION *of Curtis Manufacturing Company* A49-1
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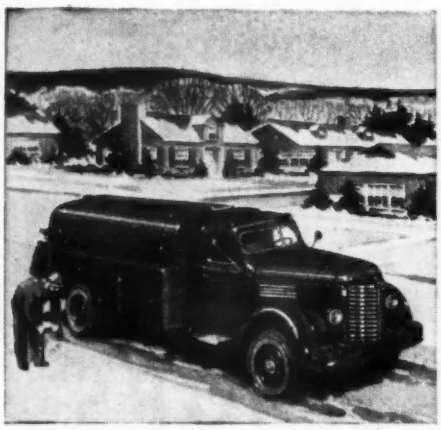
Please send me your literature Kit C-6, which includes bulletins on Curtis Air Compressors, Curtis Auto Lifts and Curtis Car Washers.

Name.....
Firm.....
Street.....
City..... Zone..... State.....

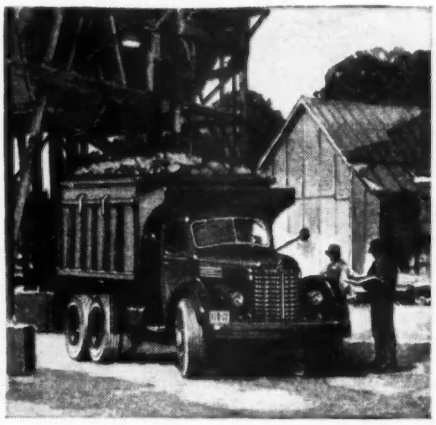
What it takes to stay heavyweight champ 17 years



1. Real heavy-duty truck reputation!

To haul lots of oil, you pick a he-man truck that's made for the job. You pick a truck with a record of performance that shouts "TOUGH!" You pick an International Truck.

Registration figures show that for 17 straight years Internationals have led the heavy-duty truck field.



2. Real heavy-duty power!

On construction jobs you need a truck that can take a pounding . . . a truck with a powerful engine, a rugged frame, sturdy strength through and through.

You find trucks like that at International Harvester . . . a builder of truck power for 42 years, a manufacturer who knows what tough trucks need.

3. Real heavy-duty truck engineering!

On big logging jobs you need size, brute strength and power . . . *specialized* by people who know your job in terms of trucks.

International heavy-duty trucks are big, tough, powerful—and *specialized* to handle the toughest hauling jobs. That's our engineering tradition.

5. That's why International trucks are heavyweight champs for heavy-duty jobs—

For 17 straight years, International heavy-duty trucks have been America's first choice for heavy-duty work. Registration figures prove it. In trucks having gross weight ratings over 16,000 pounds, Internationals are so far ahead of the field that the heavyweight crown carries a Triple Diamond emblem.

Right now, International Dealers and Branches can give you quick delivery on International heavy-duty trucks . . . specialized trucks, engineered and powered for your job.

Your nearest International Truck Dealer or Branch will be glad to send a qualified transportation engineer to analyze your hauling problem, to give you facts and figures on equipment to meet your specific needs, to answer any questions you may have. Call him soon.

4. Real heavy-duty truck stamina!

Housing is a big job where you measure truck toughness by years of getting the work out and keeping the costs down on all hauling operations.

You can count on years of service from International heavy-duty trucks. The nation's largest exclusive truck service organization is set up to keep Internationals operating at peak efficiency, over the long haul.

Other International Harvester Products
Farmall Tractors and Machines
Industrial Power . . . Refrigeration

Tune in James Melton and "Harvest of Stars"
CBS, Wednesday evenings

INTERNATIONAL TRUCKS

INTERNATIONAL HARVESTER COMPANY • CHICAGO

FLEET OPERATORS' EXPERIENCE HANDBOOK

Part 4

LETTERING & DECORATION

Practices in Truck Fleets

Most fleets do own truck lettering and decoration, mostly using decalcomanias and freehand art, and renew both with each repaint job. Study also shows 15% fleets use reflective materials for attracting attention at night; two types reported, with about equal number of users for each

Analysis by **A. W. GREENE,** Managing Editor, Commercial Car Journal

NOT ONLY do the majority of fleets do a thorough job of reconditioning and repainting their own trucks but 73.06 per cent also handle all the final details—lettering and decoration—in their own shops, as shown in Table 1. Of the balance, 23.74 per cent farm out all lettering, 3.20 per cent only farm out overflow work.

Lettering jobs in fleet shops are mostly handled by the application of decalcomanias, although a surprisingly large number employ skilled letterers who do freehand work, as shown in Table 2A. The column headed "Other," is comprised of 10 per cent of fleets that use the silk screen lettering process, 8.13 per cent that have the required lettering made up on metal panels, and 2.50 per cent that use metal cut-out letters.

The types of lettering employed by fleets that send this work out to commercial shops is shown in Table 2B. This group seems to favor freehand lettering, although 42.31 per cent buy decals, and 17.31 per cent are satisfied with stencil work. The column headed "Other," contains mostly fleets that specify silk screen lettering, and one carrier that uses metal panels.

While there are a few fleets that mask the lettering on every other repaint job, most fleets renew lettering with each repaint job, as shown in Table 3. However, it is not to be construed that all fleets in the column headed "No," try to make their lettering serve two or more body paint jobs. The fact is that about half of these fleets reletter oftener than their repaint intervals; probably the result of a need to replace faded or damaged letters.

Most Fleets Do Own Truck Lettering

Q. "Do you apply lettering in your own shop or outside shop?"

A. 73.06% apply lettering in own shop, 23.74% have it done in an outside shop.

Table 1

VOCATIONAL GROUPS	Total Number of Fleets Reporting	Own Shop (Per Cent)	Outside Shop (Per Cent)	Some Own Shop, Some Outside Shop (Per Cent)
FOR-HIRE CARRIER	31	61.29	35.48	3.23
FOOD DISTRIBUTION	43	67.44	30.23	2.33
GOVERNMENT	54	88.89	11.11	.....
CONSTRUCTION	9	88.89	11.11	.....
INDUSTRIAL	4	25.00	75.00	.....
PETROLEUM	8	75.00	12.50	12.50
PUBLIC UTILITY	29	68.97	17.24	13.79
RETAIL DELIVERY	25	60.00	40.00	.....
TRUCK RENTAL	8	75.00	25.00	.....
TRUCK & BUS FLEETS, MIXED	8	100.00	.....	.....
TOTAL & AVERAGE	219	73.06	23.74	3.20

COMPOSITION OF VOCATIONAL GROUPS as Used in the Accompanying Tables

FOR-HIRE CARRIER—Motor Freight Operators in Local and Over-the-Road Service.
FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Products fleets.
GOVERNMENT—State, County, Municipal, and Federal fleets.
CONSTRUCTION—Builders, Quarries, Gravel fleets.
INDUSTRIAL—Fleets operated by manufacturers.
PETROLEUM—Production and Distribution fleets.
PUBLIC UTILITY—Gas, Power, Water, and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products) Dry Cleaning, Laundry, Newspaper, Coal & Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
TRUCK & BUS FLEETS, MIXED—Passenger carriers operating own truck fleets.

Special Art

A GREAT many fleets decorate their trucks either with their company trade marks or the products being delivered. This special art work is applied in several ways.

Table 4A shows how the fleets that do their own work handle these jobs. The majority, 68.60 per cent, apply decals; 20.66 per cent employ skilled artists who do the work freehand; and 18.18 per cent use stencils. Practices of fleets in "Other" column are: Metal panels, 4.13 per cent; silk screen, 2.48 per cent; wood panels, 0.83 per cent.

As for fleets that have the commercial shops do this special art work, freehand work leads in preference with 48.89 per cent; decals, a close second, with 42.22 per cent; and stencils, third, with 13.33 per cent. The types of art in "Other" column is evenly divided between decals and metal signs.

It seems pertinent to make one additional interesting ob-

servation on Tables 4A and 4B. The question was, "If your vehicles carry a trademark or special art work, how do you apply it?" The total number of fleets responding to this question was 166—121 shown in Table 4A, and 45 in Table 4B. The total number of fleets that participated in this survey is 219. The conclusion to be drawn is that 166 of the 219, or 75.80 per cent, employ special art or other decoration to make their vehicles stand out. The remaining fleets apparently have their vehicles unadorned, except for the essential lettering.

Reflecting Materials

AMONG the questions included in this survey was one asking the types of reflective materials fleets used for attracting attention to the vehicle at night. The returns showed that 15.57 per cent of all fleets reporting use this type of signs, art or safety markers on their vehicles. Shops doing their own work are far in the lead, tallying 12.74 per cent of the total.

Two types of reflective materials were reported in use. Their use is about evenly divided, whether the fleets do their own work or farm it out. The overall average is 51.52 per cent for fleets using prepared sheets and 48.48 per cent for fleets using separate materials.

The Appearance Maintenance survey will be concluded next month. Fleet use of finishing materials, equipment, personnel and costs will be analyzed.

Fleets Lettering Own Trucks are Using Decals

Q. "What kind of lettering do you use?"

A. Of fleets doing own work, 68.75% apply decals, 33.75% do lettering freehand, 23.75% use stencils.

Table 2A

VOCATIONAL GROUPS	Number of Fleets Doing Own Lettering	Decals (Per Cent)	Freehand (Per Cent)	Stencil (Per Cent)	Other (Per Cent)
FOR-HIRE CARRIER	19	42.11	57.89	26.32	21.05
FOOD DISTRIBUTION	29	68.97	27.59	.....	10.35
GOVERNMENT	48	47.92	29.17	47.92	22.92
CONSTRUCTION	8	37.50	25.00	12.50	37.50
INDUSTRIAL	1	.....	100.00	.....	.....
PETROLEUM	6	100.00	50.00	16.67	.....
PUBLIC UTILITY	20	85.00	10.00	.....	25.00
RETAIL DELIVERY	15	80.00	40.00	13.33	26.67
TRUCK RENTAL	6	83.33	66.67	33.33	.....
TRUCK & BUS FLEETS, MIXED	8	75.00	37.50	50.00	37.50
TOTAL & AVERAGE	160	68.75	33.75	23.75	20.63

Fleets Doing Own Art Work Select Decals

Q. "If your vehicles carry a trade mark or special art work, how do you apply it?"

A. 68.60% fleets doing own art work apply decals; 20.66% employ freehand drawings, and 18.18% use stencils.

Table 4A

VOCATIONAL GROUPS	Number of Fleets Applying Own Trade Marks and Special Art Work	Decals (Per Cent)	Freehand (Per Cent)	Stencil (Per Cent)	Other (Per Cent)
FOR-HIRE CARRIER	11	36.36	54.54	27.27	9.09
FOOD DISTRIBUTION	25	84.00	16.00	.....	4.00
GOVERNMENT	32	53.13	21.88	28.13	3.13
CONSTRUCTION	4	25.00	25.00	50.00	25.00
INDUSTRIAL	1	.....	.....	100.00	.....
PETROLEUM	6	83.33	16.67	16.67	.....
PUBLIC UTILITY	16	87.50	.....	.....	12.50
RETAIL DELIVERY	13	84.62	15.38	15.38	15.38
TRUCK RENTAL	6	66.67	50.00	33.33	.....
TRUCK & BUS FLEETS, MIXED	7	85.71	14.29	28.57	14.29
TOTAL & AVERAGE	121	68.60	20.66	18.18	7.44

Most Fleets Renew Lettering Every Time Body is Refinished

Q. "Do you renew lettering every time body is refinished?"

A. 90.09% fleets renew lettering when body is refinished.

Table 3

VOCATIONAL GROUPS	Total Number of Fleets Reporting	YES (Per Cent)	NO (Per Cent)
FOR-HIRE CARRIERS	31	87.10	12.90
FOOD DISTRIBUTION	41	90.24	9.76
GOVERNMENT	54	96.15	3.85
CONSTRUCTION	9	100.00	.....
INDUSTRIAL	4	85.71	14.29
PETROLEUM	7	85.71	14.29
PUBLIC UTILITY	25	88.00	12.00
RETAIL DELIVERY	25	88.00	12.00
TRUCK RENTAL	8	87.50	12.50
TRUCK & BUS FLEETS, MIXED	8	87.50	12.50
TOTAL & AVERAGE	212	90.09	9.91

Fleets Buying Lettering Favor Freehand Job

Q. "What kind of lettering do you use?"

A. Of fleets buying lettering service, 73.08% choose freehand, 42.31% select decals, 17.31% prefer stencils.

Table 2B

VOCATIONAL GROUPS	Number of Fleets Not Doing Own Lettering	Freehand (Per Cent)	Decal (Per Cent)	Stencil (Per Cent)	Other (Per Cent)
FOR-HIRE CARRIER	11	81.82	36.36	9.09	9.09
FOOD DISTRIBUTION	13	69.23	61.54	23.08	.....
GOVERNMENT	6	33.33	66.67	50.00	16.67
CONSTRUCTION	1	100.00	.....	.....	.....
INDUSTRIAL	3	66.67	33.33	33.33	33.33
PETROLEUM	1	100.00	.....	.....	.....
PUBLIC UTILITY	5	60.00	60.00	.....	.....
RETAIL DELIVERY	10	90.00	.....	10.00	20.00
TRUCK RENTAL	2	100.00	100.00	.....	.....
TRUCK & BUS FLEETS, MIXED	...	.....	.....	.....	.....
TOTAL & AVERAGE	52	73.08	42.31	17.31	9.62

Fleets Buying Special Art Favor Freehand and Decals

Q. "If your vehicles carry a trade mark or special art work, how do you apply it?"

A. 48.89% fleets buying special art work choose freehand art, 42.22% prefer decals, and 13.33% are partial to stencils.

Table 4B

VOCATIONAL GROUPS	Number of Fleets Not Applying Own Trade Marks and Special Art Work	Freehand (Per Cent)	Decals (Per Cent)	Stencil (Per Cent)	Other (Per Cent)
FOR-HIRE CARRIER	9	55.56	33.33	22.22	22.22
FOOD DISTRIBUTION	11	54.54	45.45	9.09	.....
GOVERNMENT	6	16.67	66.67	16.67	.....
CONSTRUCTION	1	100.00	.....	.....	.....
INDUSTRIAL	3	66.67	33.33	33.33	.....
PETROLEUM	1	100.00	.....	.....	.....
PUBLIC UTILITY	4	25.00	75.00	.....	.....
RETAIL DELIVERY	9	44.44	22.22	11.11	22.22
TRUCK RENTAL	1	100.00	100.00	.....	.....
TRUCK & BUS FLEETS, MIXED	...	.....	.....	.....	.....
TOTAL & AVERAGE	45	48.89	42.22	13.33	8.89

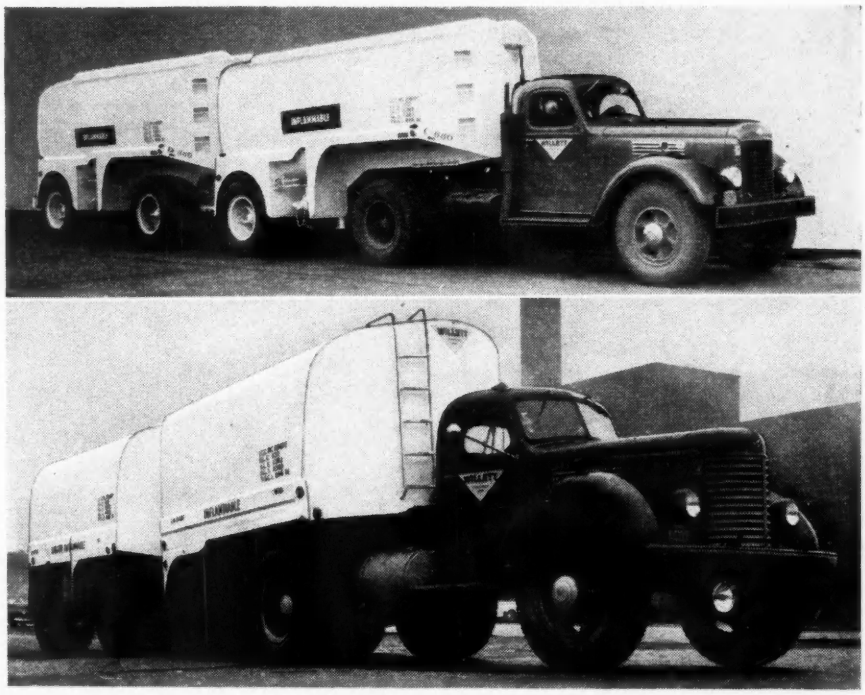
Table 1—Comparative Cost For One Year (36,000 Miles)

Age (Years)	DIESEL-POWERED TRUCKS		GASOLINE-POWERED TRUCKS	
	Cost Per Mile (Cents)	Cost Per Year	Cost Per Mile (Cents)	Cost Per Year
1	8	$2,880	10	$3,600
2	9	3,240	15	5,400
3	10	3,600	15.5	5,580
4	11	3,960	16.5	5,940
5	11.5	4,140	17.0	6,120
6	12.5	4,500	17.5	6,300
COST: (Six Year Period).....		$22,320		$32,940

Table 2—Gross Cost Comparison

ITEMS	DIESEL POWERED TRUCKS	GASOLINE POWERED TRUCKS
Original List Price.....	$9,500	$7,500
* Operating Cost for Six Year Period.....	22,320	32,940
Gross Cost for Six Year Period.....	$31,820	$40,440
SAVING: ($40,440 minus $31,820)..	$8,620	.....

* Refers only to items discussed in text.



These two Willett Co. tractor-trailer combinations, one diesel (top) the other gasoline, carry identical loads over identical terrain, average 36,000 miles per year. For cost comparison of these and others like them, see tables at left

DIESEL vs GASOLINE COSTS

Diesel-powered trucks and buses are less costly to operate according to records of a for-hire carrier and a bus fleet operator

TWO PAPERS presented at the SAE Annual Meeting in Detroit, the week of Jan. 10, 1949, brought out some interesting information on the comparative operating costs of diesel and gasoline engines. One paper, presented by Howard L. Willett, Jr. of The Willett Co., Chicago, outlined the costs as they related to truck operation. The other paper, by E. N. Hatch, of the Board of Transportation, New York City Transit System, confined the cost comparisons to bus operation in the New York metropolitan area.

Diesel Truck Costs Lower

THE studies made by The Willett Co. were based on very exacting conditions. The comparisons included only vehicles in the same age groups, operating under identical road conditions, identical calendar periods to eliminate seasonal variations, and so on.

The items included in cost compilation include fuel, preventive maintenance, grease, oil, parts and labor, tire repairs, washing, and shop overhead. They do not include fixed truck costs, such as depreciation—truck and tires, storage, interest on investment, licenses, insurance, driver wages, operating overhead or profit.

The comparative figures have been compiled into tabular form covering a 6-year period. Table 1 shows comparative costs—per mile, per year, and total—for each of the six years. Table 2 summarizes these data and includes the original diesel and gasoline unit list prices.

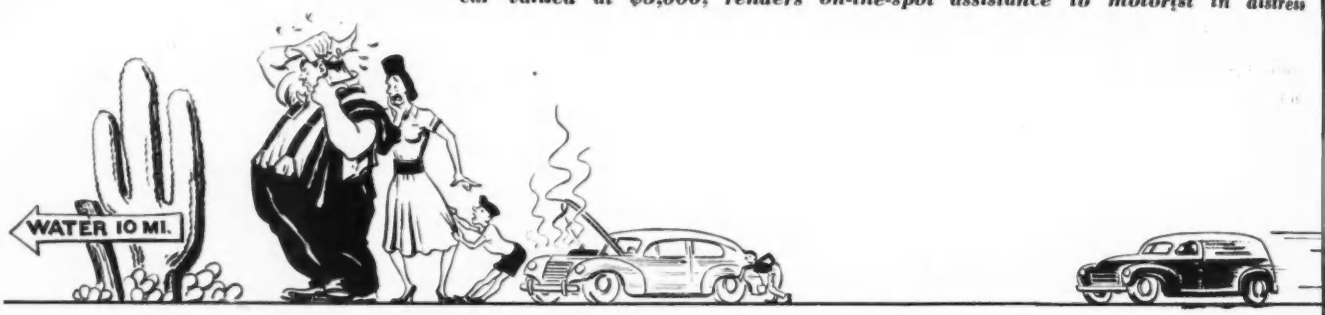
Mr. Willett concludes that, under the particular conditions outlined, the diesel cost The Willett Co. $8,620 less, to operate for the six-year period than a gas truck.

Comparison in Bus Service

MR. HATCH'S comparisons of diesel and gasoline-powered buses were more comprehensive, taking into consideration, for example, such fac-

(TURN TO PAGE 136, PLEASE)

Assistant Safety Supervisor Robert Fischer, with his fully-equipped patrol car valued at $5,000, renders on-the-spot assistance to motorist in distress



Good Will Patrol

TRUCK DRIVERS have always been Knights of the Highways, assisting distressed motorists miles from nowhere. One trucking company on the West Coast has recently focused attention on this accepted courtesy and gained public recognition for its service. The company is the West Coast Fast Freight, Inc.

It all started when WCFF inaugurated a faster schedule. To get quick assistance for any truck that stalled, thus insuring second-morning delivery, Los Angeles to Portland, and third-morning delivery, Los Angeles to Seattle, WCFF put small ½-ton panel patrol cars on the highways to check its fleet and keep the trucks rolling. But there were other reasons for these patrol cars. Particularly, they were checking for driving violations and enforcing a 45 mph speed limit imposed for safety and insurance protection. Maintenance was a reason also since the company experienced less costly repairs and longer life to its equipment if the trucks adhered to a 45-mph speed.

WCFF operates between Los Angeles and Seattle, and between Los Angeles and Denver, carrying general cargo, particularly refrigerated and frozen foods from the Northwest. The company operates 250 units of line equipment including semi and full trailers.

It was natural that B. M. Stewart, president, and Donald H. Roberts, vice-president of WCFF, Inc., should instruct these small patrol cars to aid distressed motorists as an additional duty.

In the last seven months, three patrol cars painted red and white have assisted between 200 and 250 motor-

West Coast's three-car safety patrol keeps company trucks rolling on stepped up schedules, renders free aid to all, and does bang-up public relations job!

By Don L. Burgess

EQUIPMENT CHECK AND OBSERVATION REPORT

Name ..... On ..... Date .....
at ..... Time Your Vehicle License No. ..... Bus/Tractor No. .....
Trailer No. ..... was observed going ..... Direction ..... on Route No. .....
near the city of ..... State of .....

Below is a detailed report regarding the operation of this vehicle:

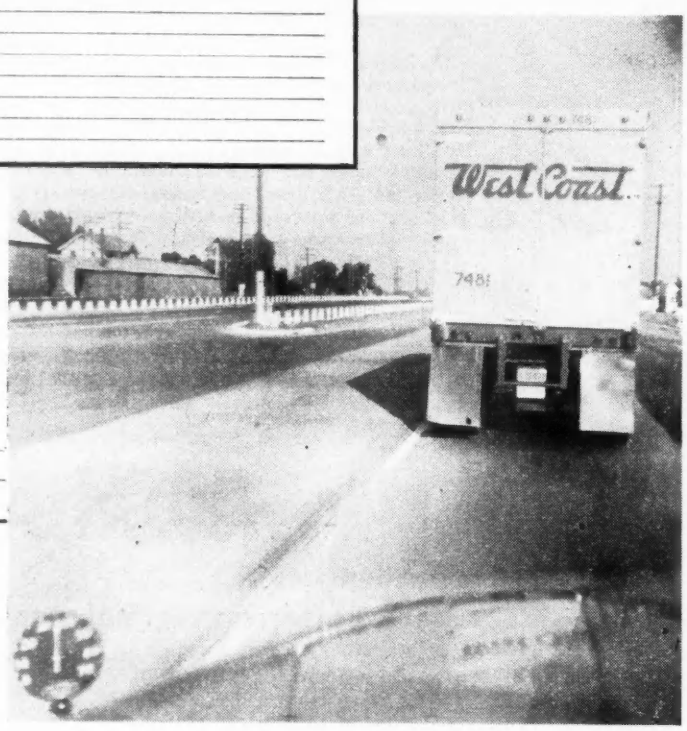
CONDITION OF VEHICLE	DRIVER	ROAD CONDITIONS
Head Lights	Reckless	Dry
Tail Lights	Speed	Wet
Stop Lights	Wrong Side of Road	Muddy
Marker Lights	Passing Trolley	Snow
Mirrors	Passing on Curve	Icy
Kelso Tag	Passing on Hills	Visibility
Flares, etc.	Passing Wrong Side	Hill
Drivers Logs	Fails to Signal	Curve
Fire Ext.	Thru Safety Zone	Level
Repair Shops	Follows too Closely	R. R. CROSSINGS
Reflectors	WIDTH OF ROAD	Stopped
TIRES	Divided	Slowed Down
Smooth	2—Lane Traffic	WEATHER
Fabric Shows	3—Lane Traffic	Clear ..... Rainy
Proper Inflation	4—Lane Traffic	Cloudy ..... Snow
Under Inflated		
Wheels Wobble		

REMARKS: (use other side if necessary)

RECOMMENDATIONS .....

Engineer.

CONFIDENTIAL REPORT FOR HOME OFFICE



Top: Observation Report gives details of each incident.

Above: With Trafik camera and speedometer on left front fender, patrolman has indisputable evidence

ists each month, in addition to checking and assisting their own trucks. All service, even parts when necessary, is free. One patrol car operates from Los Angeles to the Oregon line; a second, in Oregon; and a third, in Washington. As yet, none has been permanently scheduled on the Denver run, although occasionally one of the patrol cars makes a run over that route.

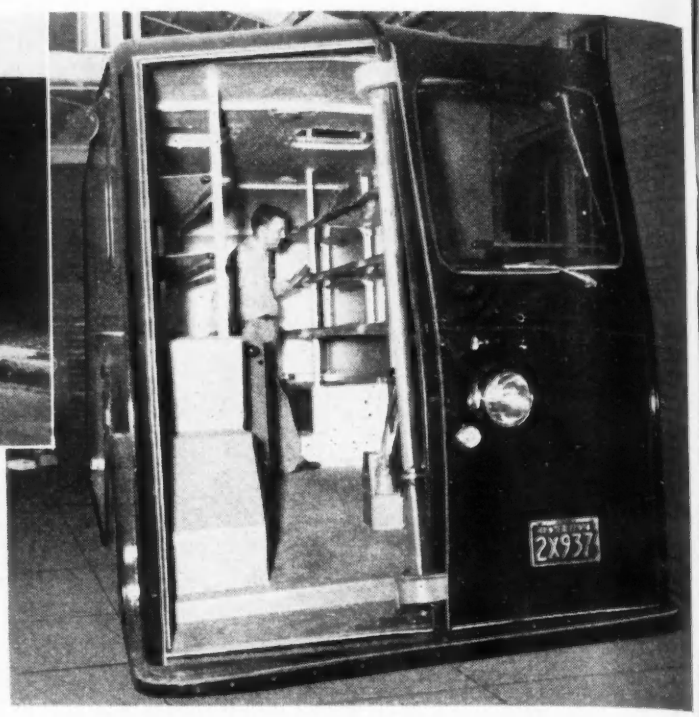
These patrol cars are equipped to render medical first aid to persons and mechanical "first aid" to automobiles. Besides tools and tow cables and first aid equipment, each carries a supply of fan belts, tires and tubes of popular sizes, headlight bulbs and sealed beam units, containers of gasoline, diesel fuel, water, oil, spark plugs, fire extinguishers, portable acetylene welding equipment, flares and fuses, and each has a battery-operated, flashing red light signal for nighttime use. Many times these patrol cars have assisted highway patrolmen direct traffic at the scene of an accident, and the red neon signs, one on each rear door window, reading "Stop" and "Caution" are the envy of the highway patrolmen. The glaring neon readily commands attention from fast moving traffic. The amount of tools and equipment in each patrol car is valued at somewhere between $2000 and $3000. The patrol car complete with equipment is estimated at a round figure of $5000.

Reprimands Are On-The-Spot

EACH operator of a patrol car holds the title of Assistant Safety Supervisor. Each is mechanically inclined and is instructed in first aid. For the first two months after the patrol was inaugurated, the operators were employees of the company. Now the operators are on the payroll of Pierce & Sibert, Inc., insurance brokers, but all equipment, including the patrol cars, is owned by WCFF. Operators' expenses are paid by WCFF. This special arrangement greatly benefits employee relationship. If reprimand to truck drivers is necessary for an infraction of a safety rule the reprimand carries added weight coming from a third

(TURN TO PAGE 128, PLEASE)

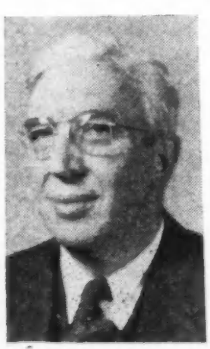
Newest UPS door-to-door delivery. Design is completely functional. Chief features: Front entrance, side-mounted engine, tubular chassis frame and aluminum construction. Side is made of a single aluminum sheet, 80½ x 189 x ⅛ in. thick



33x74-in. opening is tops for loading and route delivery requirements. Loading advantages: Truck heads into platform, eliminating twisting, craning and jockeying by driver to back up; majority of packages are stacked on shelves, carpets and linoleum on top of engine housing. On route: Driver does not step into traffic lane, serves both sides of road with ease; skylights and electric lights inside aid in locating parcels; in hot weather, driver leaves door open. Door is opened manually by lever seen through windshield

UPS Delivery Car EXPERIMENT • • • Emphasizes

Tries front entrance, side-mount engine, dual fuel & batteries; vertical steering column,



Ralph M. Werner
Chief Automotive Engineer
United Parcel Delivery Service, New York

IMMEDIATELY AFTER THE WAR, United Parcel Service, like most other fleets, was faced with a vehicle replacement program. At that time, chassis were almost unobtainable, materials scarce, and body manufacturing facilities difficult to secure.

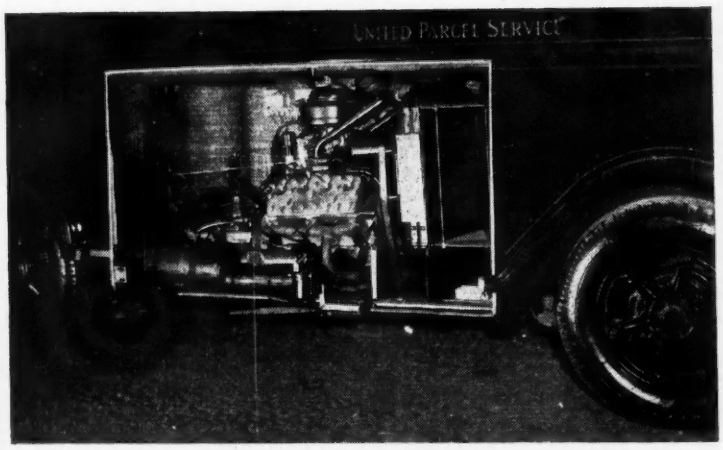
After some search, arrangements were made with the Hahn Motors, Inc., of Hamburg, Pa., to undertake a body building program. This firm, having just completed a war contract, had the needed space, facilities and personnel.

A shortage of steel, of the quality suited for the UPS body panels, made substitution necessary. Other materials were given consideration and, finally, a quantity of heavy-gage aluminum sheets was secured.

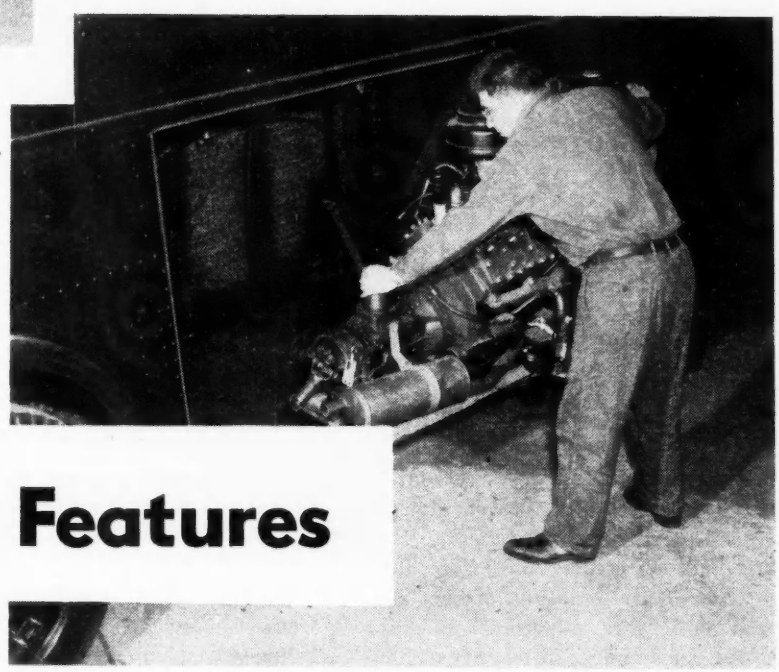
Using these aluminum sheets, Ralph M. Werner, United's automotive engineer, finally produced an acceptable design incorporating a number of unusual structural details, among them an aluminum extrusion of unique design.

The first United Parcel Service postwar aluminum-bodied vehicles built by Hahn Motors were delivered in less than normal time because Hahn concentrated most of its facilities on the job. Another reason for the speed was that it was unnecessary to make special dies or purchase many special tools. The aluminum sheets made work simplification possible to the extent that only standard machine shop equipment was used in the manufacture

Step is only 15 in. high, despite large wheels (7.00x20 tires). Door is shown open at widest point of opening arc of operating mechanism. Normal open position of door is flat against other half. Manual effort for opening and closing is low due to high-leverage design. Front panel accessories are readily accessible for checks and repairs



Compact power plant is located amidship, right side. As far as known, this is only unconventional mounting without transfer case. Instead, differential is offset 18 in. for alignment with engine. Compartment is sealed and insulated. Baffle ahead of radiator and oversize fan, supply air for cooling. This design has been road tested for a year



Power plant removal or installation is fast and easy. Part of chassis tubular frame construction is shown below muffler

New Efficiency Features

oversize springs in new heavy job

of the bodies. Moreover, the elimination of preformed sections kept costs down.

Custom Body Experiment

IT IS United Parcel Service policy to purchase complete delivery cars from established manufacturers, when such units are available, and of a size and design that can be adapted to the special requirements of the consolidated retail delivery service.

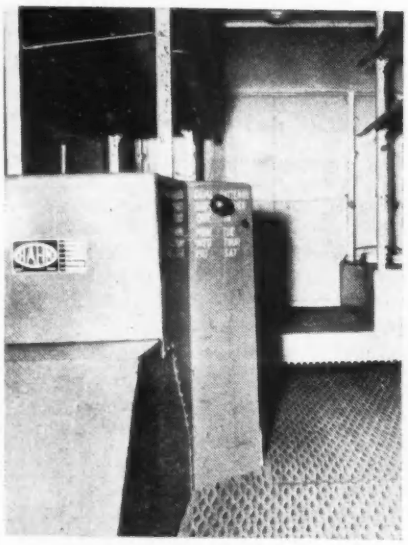
(TURN TO NEXT PAGE, PLEASE)

No gripes about accessibility for adjustments. Some parts were moved to make this possible. Sliding panel covers opening. Grille at right admits air to cooling system

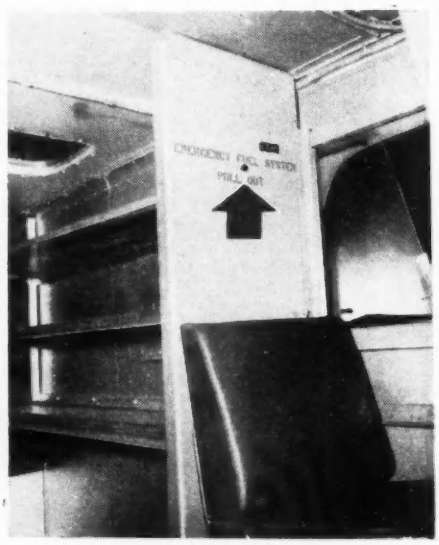
UPS Delivery Car EXPERIMENT

Continued from page 71

Outstanding features: Small but comfortable cab (41 in.); longest springs in its class (front, 60 in., rear 72 in.); power-to-weight ratio designed so that engine may be governed several hundred revolutions less than its manufactured rating for oil-fuel economy



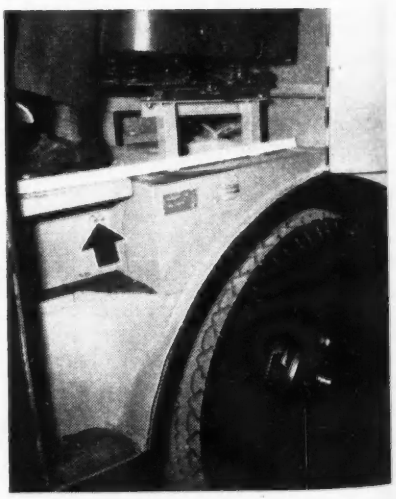
Each vehicle is equipped with dual battery system and a convenient selector



In case of fuel system failure, driver reaches overhead and pulls knob

Driver has comfortable seat, ample room. Unique steering comprises vertical post with two universal joints each make a 27 deg bend and comfortable steering angle

Steering post is 36 in. from back of cab (see yardstick at driver's foot). Recessed steps are coated with abrasive. Fittings below top step supply grease to clutch pedal shaft bearings



However, often it is necessary to have custom bodies built, and the company is continually working on the development of experimental designs for possible future use.

Therefore, after the immediate postwar body building project was well under way, attention was given to the development of two experimental models embodying many unusual features deemed to be desirable for United Parcel's delivery service.

Front-Entrance Delivery

PERHAPS the most interesting of the two new models is the parcel delivery car, identified either as the "front entrance job" or by its nickname "side winder." Both names are descriptive of the vehicle's two most outstanding features.

It is thought that the front entrance job represents just about the last word in functional designing of a parcel delivery vehicle. The driver who operated the pilot vehicle in regular route service for a year pointed out that he was able to do more work with greater efficiency, more comfort and less fatigue than with any vehicle he has ever driven.

The accompanying illustrations show both the front entrance and the unique side engine mounting feature.

While this is not the first time that a vehicle has had its engine shifted from its conventional position, it is believed to be the first instance that does not employ a transfer case—regarded as just another unit to service and another detour in the path of maximum power transmission efficiency.

The biggest question mark in this design was the possibility of overheating. The performance test has been fairly satisfactory, except on the hottest days.

Counter-balancing of the engine's weight also seems satisfactory. The dual set of batteries, and the almost always full 17-gal reserve tank of gasoline has proved to be sufficient. The main gas tank, incidentally, is of 45-gal capacity and is mounted in the rear.

As for engine accessibility for

(TURN TO PAGE 176, PLEASE)

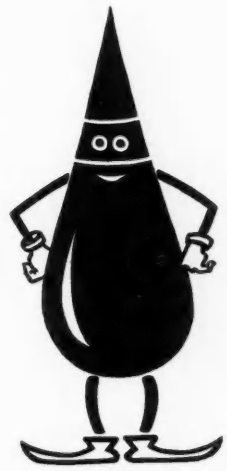
Who makes it?

What is it?

When should it be used?

Where is it available?

Why is caution advisable?



5 "W's" on 5-W OIL

By Joseph Geschelin
CCJ Detroit Technical Editor

A NEW 5-W engine lubricating oil now is available to vehicle users in the sub-zero areas of the United States and Canada to ease the problem of starting.

This 5-W oil is intended to replace the mixture of 10-W oil and 10 per cent kerosene which for about 15 years has been used for temperatures below minus 10 deg. F.

Who is back of this development? What refiners are marketing a 5-W oil? What are the advantages and disadvantages of this oil? In what types of vehicles may it be used? What temperature conditions must accompany its use? Is the use of 5-W generally approved and recommended or does an element of controversy still prevail? In what areas is the new oil available?

Kerosene Mixtures Unstable

THE introduction of 5-W oil is the result of years of intense study of problem of starting in extremely cold temperatures. The prime movers were prominent automotive manufacturers. They intensified their activity when winter tests showed up the shortcomings of the 10-W-kerosene mixture. Kerosene is a volatile constituent of the mixture. It evaporates and disappears not only during the normal running of a warm engine but also with any significant rise in ambient temperature. Since the rate of evaporation is quite variable it is difficult for the vehicle owner to anticipate the loss. Moreover, the ordinary vehicle owner has no means of testing the crankcase charge to determine when to add kerosene or how much to add in safety. It was almost commonplace for a driver to go along for a period of time without starting trouble only to find it impossible to start some morning.

The Need for Action

DURING the winter of 1946-47 Chrysler Corp. sent an engineering expedition to Bemidji, Minnesota, to observe sub-zero driving conditions, this time with special emphasis upon observations of field conditions and spot checking of crankcase lubricant viscosity. Some of the general conclusions drawn from this experience were as follows:

1. That cold starting at extremely low temperatures is a major problem.
2. That the then current instruction book recommendations of diluting 10-W with kerosene were not adequate to meet the situation. The main objection is that the mixture does not result in a stable lubricant with respect to the all important property of viscosity.
3. That kerosene, as such, is practically unavailable at service stations.

These findings confirmed the conclusions of expeditions made in previous years both by Chrysler and General Motors.

Realizing the need for action, E. W Upham, chief metallurgist, Chrysler Corp. and H. C. Mougey, technical director, Research Laboratories Div., GMC, jointly presented a paper entitled, "Sub-Zero Automotive Oils" at the SAE National Fuels & Lubricants Meeting in Tulsa, in November, 1947. This paper presented a complete report with all supporting evidence. It also supported the adoption of basic specifications recommended by a subcommittee of the SAE Fuels & Lubricants Technical Committee. In its August, 1947, report, this subcommittee recommended that the new lubricant should be of premium grade and possess high Viscosity Index properties. The viscosity limits should be such that the proposed oil would have about the viscosity at minus 20 that 10-W has at zero. The suggested limits were 1800 to 3200 at zero F. Using these limits with oil ranging from zero VI to 100 VI, the maximum viscosity of any oil at minus 20 would be 12,000 and the minimum viscosity 6,000.

The initial introduction of such an oil, now known as 5-W, was made in Canada during the winter of 1947-48. Distribution was limited. Auto-

(TURN TO PAGE 158, PLEASE)

Shop hints

from FLEET SHOPS — Here's the Way to Win

. . . And you don't even have to listen to a radio program with Pop eating Crunchies. Just turn your radio OFF when you go home tonight. Get out a pencil and paper and jot down one of the several short cuts you have used today. Or give us a short - short on that special tool you developed

1. Tire Valve Tool

By Joseph Sanfilippo
Pep Trucking Co., Inc., Jersey City, N. J.

Here is a tool that will save a mechanic time and words when changing a tire valve on an inside dual, especially with Budd wheels.

You will need one piece of 3/16-in. welding rod 9 in. long; a piece of 3/16-in. metal tubing 5 in. long; a screw driver handle.

Drill a 5/16-in. hole at one end of rod to ¼ in. in depth. Cut out a slot at end of rod to fit the valve core. Then case-harden the working end.

Slot both ends of the tubing and fit it snugly over the welding rod. Insert the rod into a regular screwdriver handle.

When removing the old core, slide tube back toward the handle and use as regular tire valve tool. When old valve is out, slide the tube away from handle until end of rod is inserted into tube about ¾ in. Drop new valve into the tube and insert the handle. As you push on the handle, the tube will slide back, keeping the solid rod in line to start the threads.

2. Differential Stand

By Herman A. Droke
Freight Line, Kingsport, Tenn.

This handy differential stand handles all sizes and provides full 180-deg rotation. It consists of two 36-in. vertical standards of 2-in. iron pipe welded to a wide piece of channel iron about 4 ft apart. Each upright is topped with a 4-in. piece of 2-in. pipe. The holes in the pipe welded horizontally on the tops form bearings for the two holder brackets.

These are also made of pipe just small enough to fit inside the 2-in. pipe Tees on top of the standards. They may be of any length but these are about 15 in. long. At each end is welded a short piece of angle iron.

The differential is held in position by a series of holes drilled in one of the brackets and matching it with a hole in the Tee.

3. Flag Holder

By A. E. Peterson
Gulf Refining Co., Louisville, Ky.

Here is a good way to keep those red flags handy for road emergencies. Bolt a 1¼-in. hose to the inside of the door with a regular hose clamp. Put a metal screw through the bottom to keep flag from falling through.

4. Ford Shift Tip

By Jimmie D. Briseno
Metzoer's Dairy, San Antonio, Tex.

On the new model Ford 1½-ton trucks, only one pin on the gearshift lever housing holds the lever in place permitting excessive play. We drilled a ¼-in. hole through the other side of the housing as shown. Then we drilled a ¼-in. hole at the upper end of the slot in the shift lever and made it oblong so as to have the necessary play. A ¼-in. pin inserted all the way through housing does the trick.

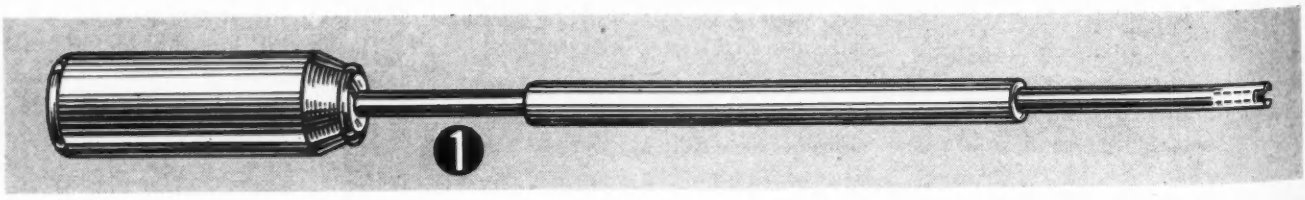
5. Shackle Pin Puller

By Edward Padden
Long Island City, N. Y.

On the Dodge '46 ½ and 1-ton trucks and many Chrysler cars removing the rear spring is a hard job due to the fact that the front shackle pin must be pulled out through a hole on side of the body.

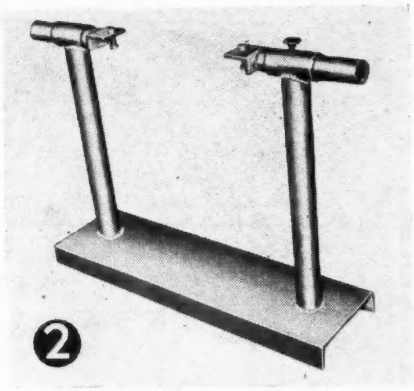
The following tool will speed this work. It is made from a 5/16-in. case-hardened bolt welded to a ½ by 12-in. steel rod. A piece of steel stock 2 in. in diameter and 4 in. long is drilled to the diameter of the rod and then slipped over the rod as shown. A stop is welded to the rod 8 in. from the bolt head so that the sliding weight can't slip off the rod.

When the tool is threaded into the shackle pin, a few bumps with the sliding weight will remove the pin in record time.



$25 FOR THE BEST HINT PUBLISHED EACH MONTH • • •

$5 FOR ALL HINTS PUBLISHED EACH MONTH



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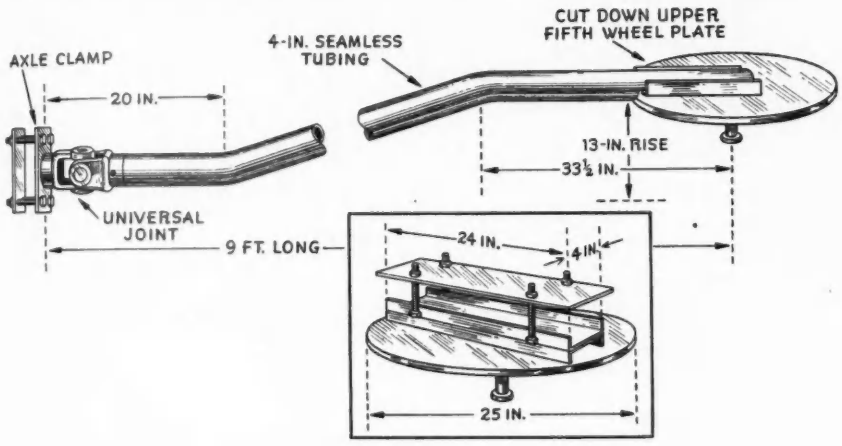


Tow Bar and Jig Eliminate Wrecker

By Lewis P. Hankins

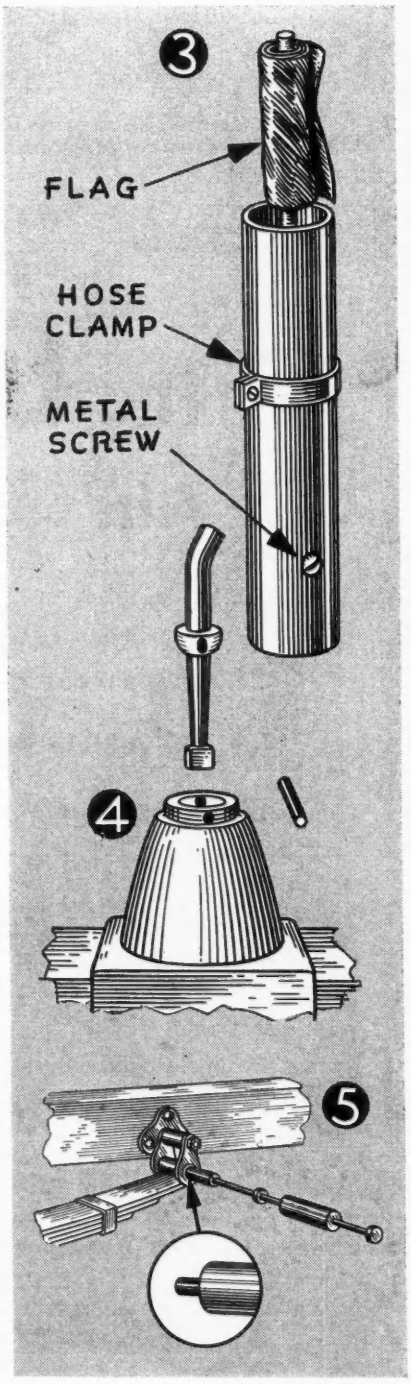
Supt. of Equipment, Hemingway Bros. Interstate Trucking Co., New Bedford, Mass.

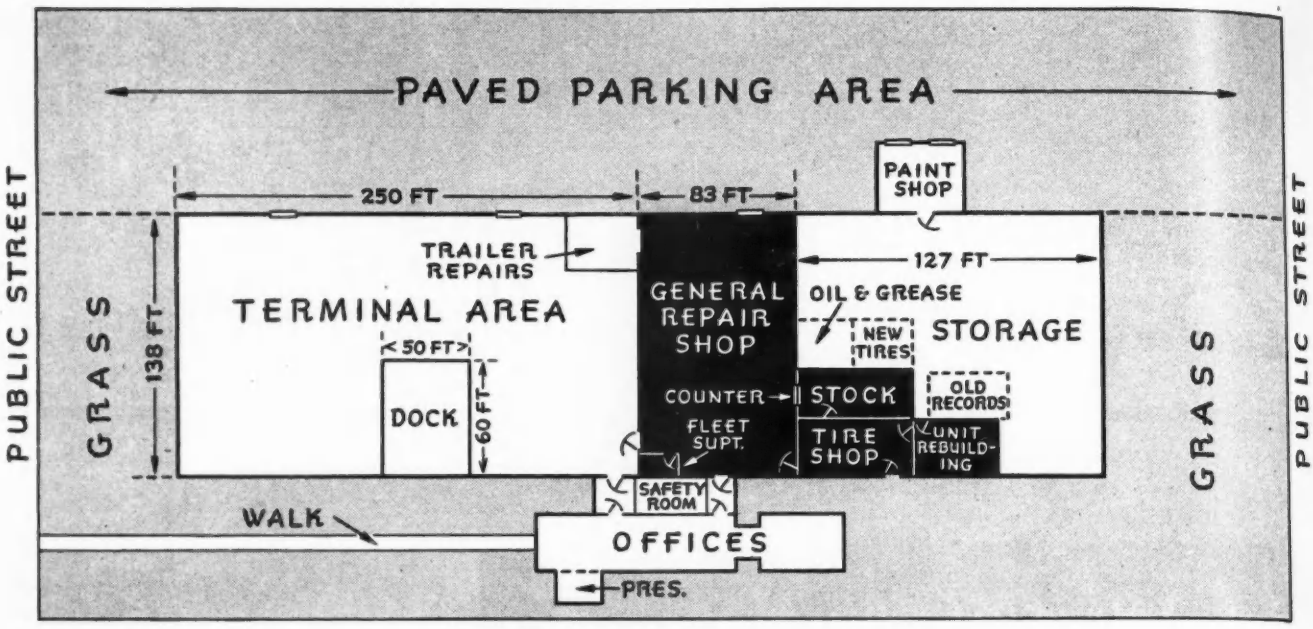
Although there are some 300 vehicles in our fleet, there is no wrecker. We can use any available tractor for this purpose thanks to the tow bar and tow jig illustrated.

If the disabled truck is towable, we use the tow bar fabricated from 4-in. seamless tubing, 9 ft long. At one end it is cut out and welded to an upper fifth wheel plate cut down to 15 in.-diameter. The joint is reinforced with a piece of 4 x 1 x ¼-in. channel iron. At the other end we welded a universal joint, and to the other side of the joint we welded a piece of 10 x 5½ x ¾-in. steel plate. This is coupled to a similar plate by four ¾ x 8-in. bolts. The front axle of the towed vehicle rides securely between the two plates.

If the disabled vehicle is not towable, we use the jig shown in the inset. Using a full 25-in. upper fifth wheel plate, we welded two pieces of 4 x 1 x ¼-in. channel iron, each 24 in. long. To the upper one, four bolts ¾ x 6-in. were welded and over these we fitted a piece of ½-in. plate steel. In this case the axle of the disabled vehicle rides securely between the upper channel and the plate. It is sometimes necessary to hire a local wrecker to hoist the disabled vehicle aboard. But the cost is small

In both cases we carry a 23-ft air hose which gives full brake action to disabled vehicle.





DRAWING 1. Overall plan shows unusual roominess of Hemingway's headquarters layout. For details of black aeas see subsequent drawings on these pages

The Old Gray Mill

Ain't what she used to be

CCJ helps make a dream shop out of a 30-year old cotton mill for 300-vehicle fleet. Features include departmentalization, modern equipment and plenty of space inside and out . . . By Lewis P. Hankins

Superintendent of Equipment
Hemingway Bros. Interstate
Trucking Co., New Bedford, Mass.

THE ACCOMPANYING LAYOUT plans of our headquarters shop at New Bedford indicate that it contains just about everything a fleetman could dream of in the way of space, mechanical equipment and operating efficiency. But the photographs (particularly the one of the tractor overhaul department) tell a slightly different story. They show that our structure is far from modern and cluttered with posts. It is this circumstance that makes us particularly proud. For unlike so many shops that make the headlines, ours was not created in a day by the hand of some architect with unlimited funds to spend. In contrast, it came about by dint of hard labor and ingenuity, applied over a period of many years.

The shop's history can be sketched in a few short sentences. Back in 1917 a group of New Bedford business men established a corporation and built a six story cotton yarn mill some 500 ft long by 138 ft wide with a separate one story wing for office space. Everything went well until the great depression when the business collapsed. In 1937 the Hemingway Brothers bought the structure, had the top five floors torn down and moved into the ground floor as the new home for their freight terminal and shop. For a decade it served

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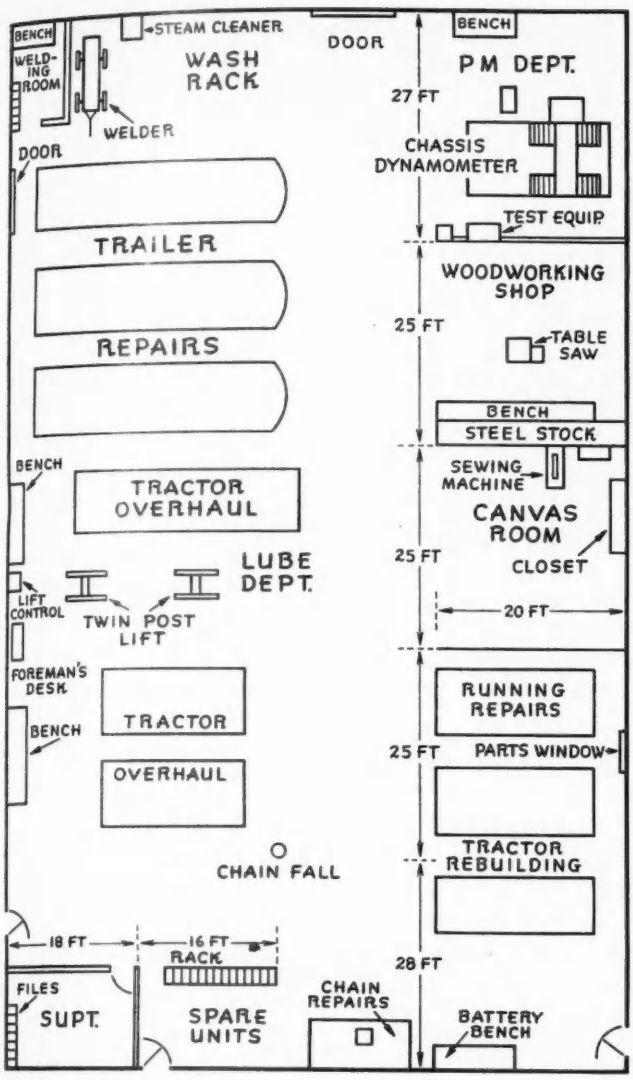


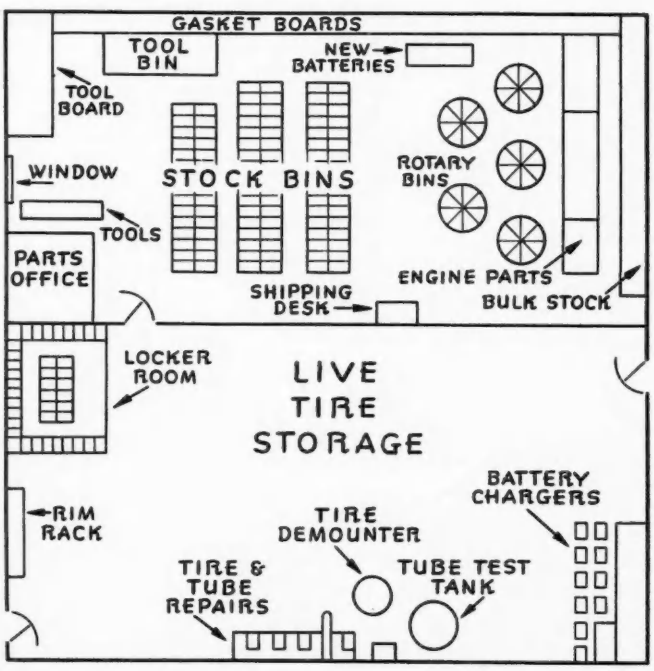
DRAWING 2 (left). General Repair Shop measures 83 x 138 ft, contains all equipment for PM (upper right) washing (upper left) and all tractor and trailer repairs; adjoins stock room, tire shop at lower right

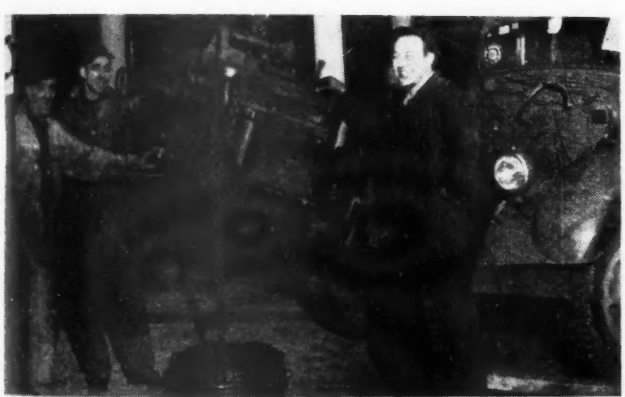
DRAWING 3 (below). Stock Room and Tire Shop are efficiently equipped and well laid out. Each is approximately 62 ft long, 26 ft wide

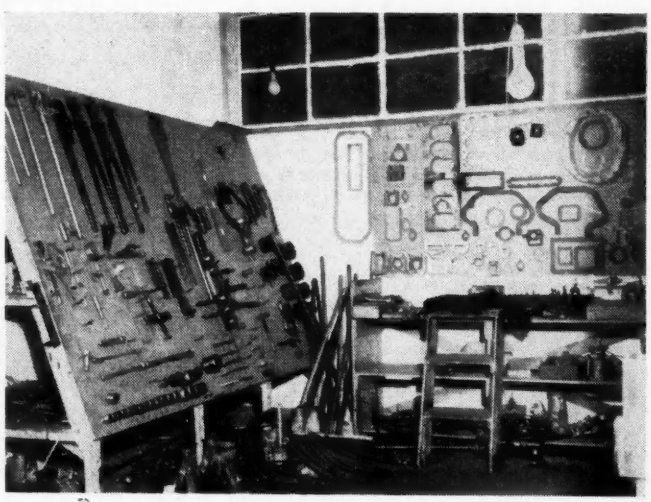
PHOTO 1 (counterclockwise below). Engine being removed by chain hoist. Photo also reveals numerous posts which, thanks to careful planning, have not hindered operations

PHOTO 2. Chassis dynamometer is pride of PM department (upper right, drawing 1). It is used for final check on every job

PHOTO 3. Corner of stock room showing tool and gasket boards, working equipment







The Old Gray Mill . . .

Continued from Page 77

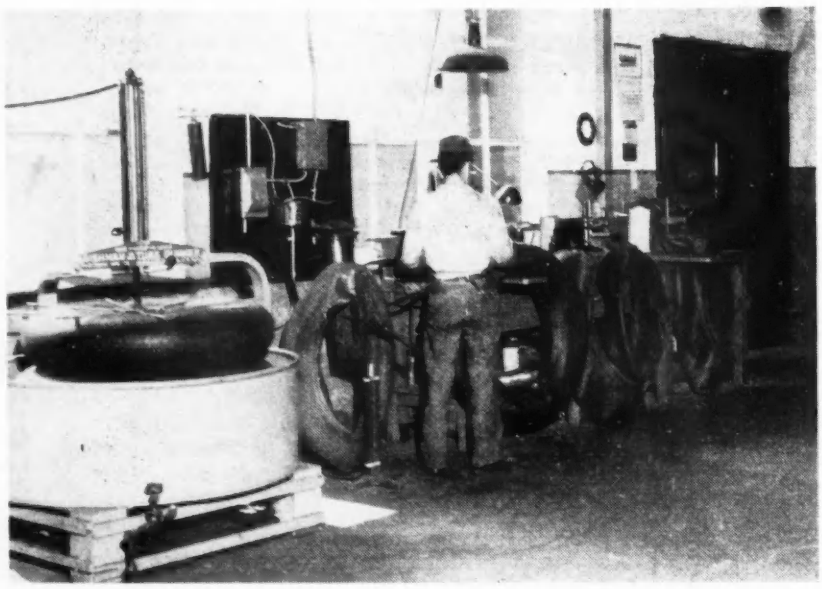
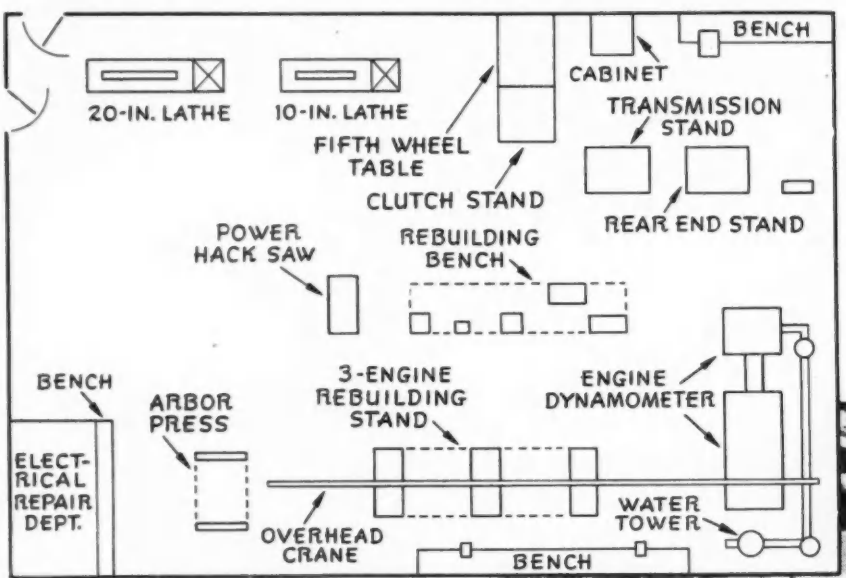


PHOTO 4. Corner of Tire Shop reveals pneumatic tube tester (left), tire mounter (center) and work bench with multiple patching equipment (right)



DRAWING 4. Unit Overhaul Shop handles "just about everything." The 12-ft rebuilding bench in center provides convenient location for boring bar, valve refacer, bearing aligner, pin reamer, rod aligner and bench grinder

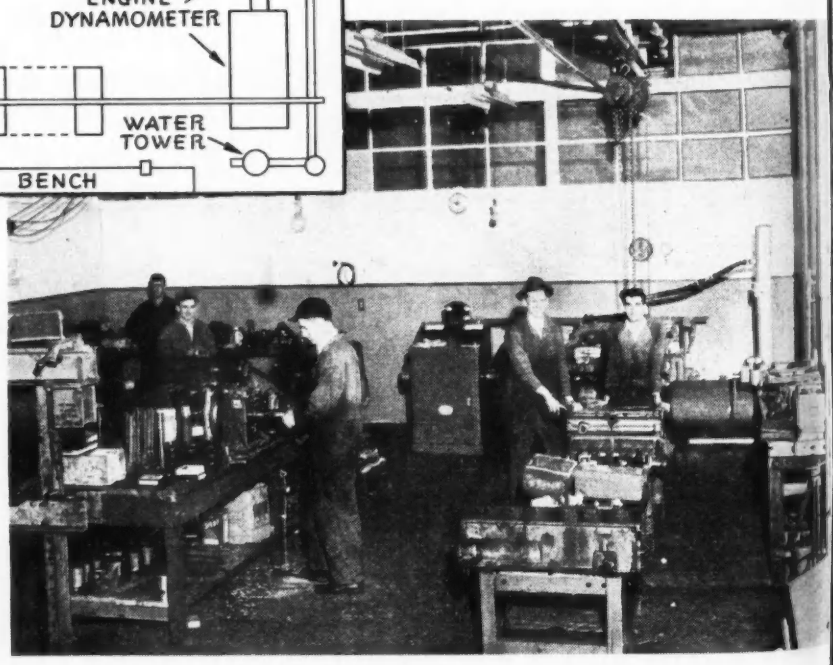


PHOTO 5 (right). Portion of unit overhaul shop shows rebuilding bench (left foreground) engine stands (right center) and engine dynamometer (rear)

its purpose well, but in a rather topsy-turvy manner. Then in 1947, with an augmented staff, we began in earnest to make it into the shop it is today.

We had most of our plans established by the fall of that year when the special November 1947 Show Issue of COMMERCIAL CAR JOURNAL came out with its 20-page feature, "An Efficiently Equipped Fleet Shop." We immediately revamped some of our plans to take advantage of the shop layouts suggested there and the final results are as shown.

Hydraulic Lift Trucks

WHILE most of the details are self evident from the drawings and photographs some brief explanatory notes will complete the picture. One of the first questions the Commercial Car Journal Editors asked was "How is heavy equipment, such as rebuilt engines and other components or even parts for the stock room transported from one part of the building to the other?" The answer is "By hydraulic lift trucks of which we have three." It will be noted that there is an overhead monorail in the rebuilding shop which takes care of necessary movements within the shop from rebuild-

ing tables to dynamometer, etc. There is also a chain fall (Photo 1) in the tractor overhaul department which is used for mounting and removing complete engines. All the rest is done by the Hydraulic lift trucks carrying whatever may be necessary from and to any point in the building on wooden pallets.

General Repair Shop

IN the general repair shop area (Drawing 2) the two most valuable pieces of equipment, both from the standpoint of monetary value and usefulness, are the complete chassis dynamometer (upper right and Photo 2) and the twin post lift (left center). Our main preventive maintenance system is built around the dynamometer which tells us actual road horsepower at given road spead, usually with the tractor in overdrive. We have minimum acceptable standards for each type of engine used and if the power isn't there we look for trouble whether it be ignition, carburetion, valves or the need for a complete overhaul. We also find it very helpful in detecting troubles all the way from the engine, or through the power train to the rear wheel studs.

While we have only one twin post lift at the moment, we have plans for two additional units in the near future. We find them cleaner, safer and easier for the men to work with than pits and worth their weight in gold when compared with lying on the floor whether it be for lubrication or general underbody repairs.

In the woodworking shop (center right) there is a ½-in. drill press, bench grinder and the usual hand tools in addition to the 3 hp. circular saw shown. The canvas shop handles upholstery as well as tarpaulins.

Stock Room and Tire Shop

IN addition to an unusually complete array of parts, housed in both fixed and rotary bins, the stock room (Drawing 3) boasts a mammoth gasket board across the north wall and two tool boards (Photo 3) located conveniently near the parts window for the use of all mechanics. All boards have been painted with outlines of tools or gaskets for quick replacement. Adjacent to the shipping desk are stock control boards (Photos 7 & 8, pg. 166) which tells at a glance just what tires and rebuilt units are on hand at each of the division terminals.

A portion of the tire repair shop is shown in Photo 4. Everything needed for running repairs is located there, although we do not do our own retreading or major sectional repairs.

Unit Rebuild Shop

THE unit rebuilding shop (drawing 4 and Photos 5 and 6) takes care of everything from fuel and electrical units to complete engine, transmission and rear end overhauls. Again the most valued piece of equipment is the engine dynamometer which doubles in brass as an engine break-in stand. Since the photograph was taken we have modified it slightly to include the transmission on the stand, as we find it more efficient to stock engines and transmissions as a unit, replacing both when the time comes.

After each engine is overhauled, we run it in for a period of 8 hours at gradually increasing speeds. After that it is ready to roll and drivers need no caution cards of any kind. They are expected and do drive the new engines at normal road speeds.

The two 12 ft. tables at right center of the rooms are somewhat unusual in that they are very effective in cen-

(TURN TO PAGE 164, PLEASE)

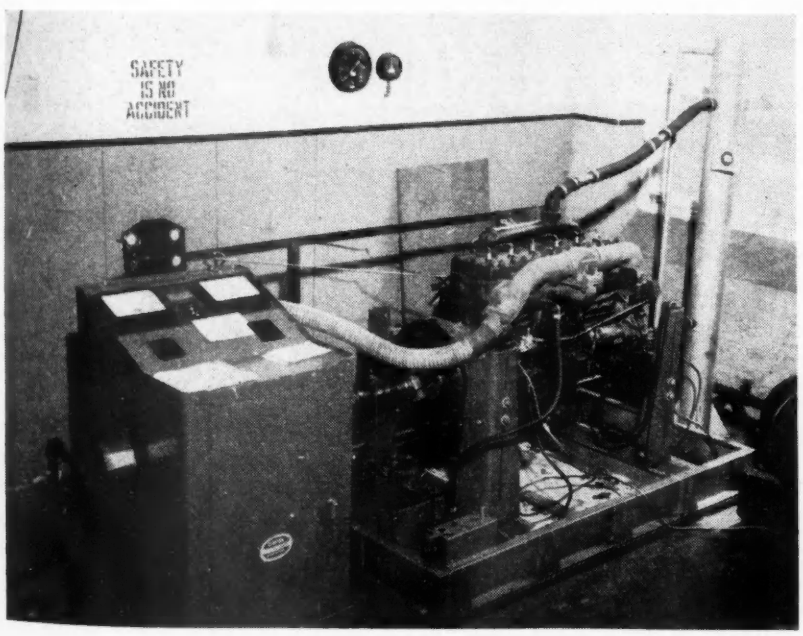


PHOTO 6. Engine dynamometer and run-in stand with cooling water tower at far right

Mutilation, heartaches, waste—in time and money—

MURDER!

in the Fleet Field

. . the VICTIM

VALVES!

In this second in a series of clinical studies of parts failures, CCJ has selected representative photographs showing some of the more common results of valve abuse. By comparing these pictures with breakdowns occurring in their own operation, fleetmen will be able to determine the cause of, and the remedy for their troubles.

Manufacturers have been cooperative in sharing their technical material on this subject in a move to help reduce such valve failures. These views of "murdered" valves were supplied by Eaton Mfg. Co., and by Thompson Products Co.

CAUSE . . .

Overspeeding

EFFECT:

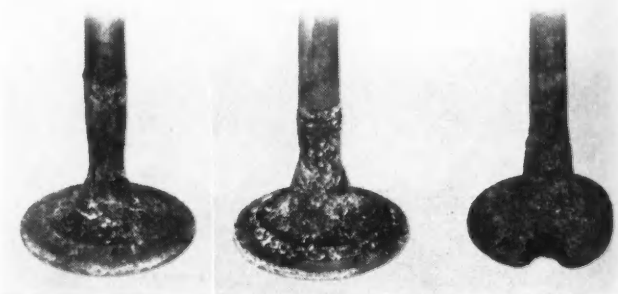
Head breaks off valve at the top.

REMEDY:

Keep speeds to proper limits. Don't permit drivers to rev engine at no load. Don't use engine to brake vehicle in too high gear for the hill. Install driver training program to show effects of such abuses.

CAUSE . . .

Improper Fuel



EFFECT:

The high gum content of poor fuels causes underhead erosion (left), heavy deposits under valve head (center), and sticking stems due to carbon (right).

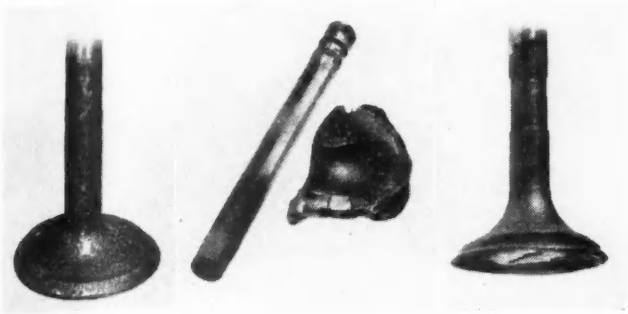
REMEDY:

Use a good grade of gasoline and adjust spark and carburetor to the fuel. Proper cooling, warm up and proper precautions observed in cold weather operation will do much to offset the buildup from fuel and lubricants.

are represented here . . . Fleetmen can profit from these horrible examples

CAUSE . . .

Excessive Tappet Clearance



EFFECT:

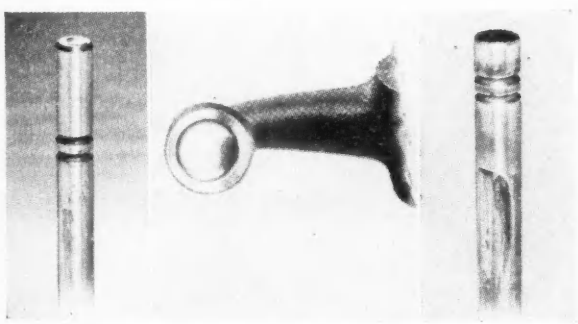
Results in burning of head (left), breaking of head (center), or cupped heads (right).

REMEDY:

Valve tappet to bore clearance should not exceed manufacturers' recommendations. Soft spots, worn contact faces, worn, cupped and cracked tappet followers and screws should be checked and replaced for accurate settings. When too much clearance is allowed, the ramp on the cam is not used and the valve train will be subjected to terrific impact forces, causing excessive loads throughout. There will be valve flutter at the cam tip, followed by smooth action of the dwell side of the cam, with the valve bouncing in closing. Too much clearance causes broken tips, broken locks, broken stems under heads, burned valves due to bounce and extra wear on cam and tappets.

CAUSE . . .

Insufficient Lubrication



EFFECT:

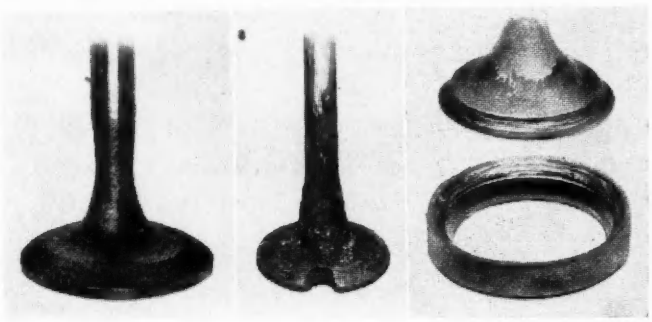
Results in worn tips (left), or in heavy stem wear typified at right. Rocker arm wear (center) also results in some cases.

REMEDY:

This sometimes occurs immediately after overhaul. Manufacturers recommend oiling of parts at assembly with an excessive pressure lubricant to preclude the initial wear. Keep bearings tight to provide adequate oil pressure. Check oil pump, lines and maintain normal crankcase oil level. Use winter grades of oil for cold weather operation and observe proper engine warm up at all times. Keep engine temperature at factory recommendations.

CAUSE . . .

Distortion in Head or Valve Seat



EFFECT:

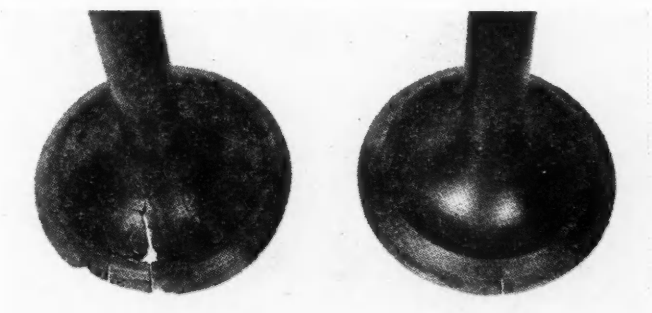
Spot burning of head caused from leakage of hot gases and consequent overheating. Corrosion of valve stem is also evidenced, due to continual blast on valve stem. This is called valve stem necking.

REMEDY:

Both the seat in the block or head and the valve face should be checked for runout with a dial indicator. Valve seat should be concentric with the guide to within .0015 to .0025 total indicator reading. Replace guides not up to these standards. Valve face should be concentric with stem to within .0025 to .003. Bent pilots and worn guides will give false readings. Keep cooling system at peak efficiency. Tighten cylinder head with torque wrench and in procedure advocated by manufacturer.

CAUSE . . .

Local Seat Leakage Failure



EFFECT:

Burning, pitting and cracking of the head are noted. High temperatures resulting from poor seating result in corroding away of face (left), or in cracking at the face (right).

REMEDY:

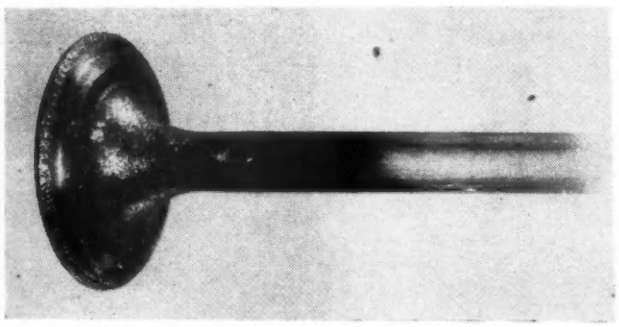
Observe careful fitting and grinding practices. Check for valve seat runout, proper seat widths, recommended valve seat angle, and make frequent tappet adjustments. Maintain adequate engine cooling to preclude block and guide distortion. Keep valve guides within wear limits specified by manufacturers. Use accurate tools for adjusting and grinding.

(TURN TO NEXT PAGE, PLEASE)

MURDER in the Fleet Field . . . Continued from Page 81

CAUSE . . .

Improper Grinding Procedure



EFFECT:

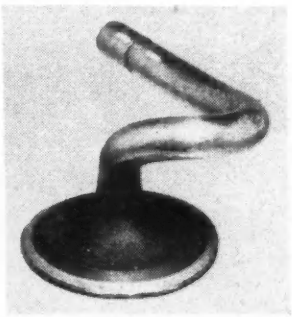
Valve is seated too low. This poor seating will lead eventually to leakage and burning.

REMEDY:

Keep valve head margins to original equipment dimensions. This will be approximately 3/64 in. The purpose of this margin is similar to a heat dam to protect the valve seat and valve face from the heat of the combustion chamber. This can be caused from worn or battered stems, from excessive grinding of the head, from improper size valves or from worn valve seat inserts. Check and double check valve stem lengths, valve seat widths and valve spring tensions. Use accurate gages.

CAUSE . . .

Broken Valve Spring



EFFECT:

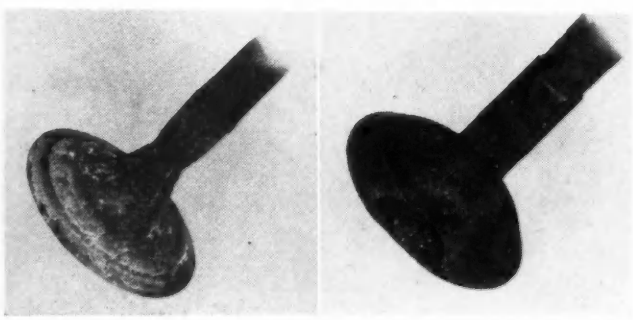
This may only cause failure to seat with resultant miss and blowby, but future operation ofttimes results in a binding of valve and twisting of stem when cam follower drives the valve out of alignment with the guide.

REMEDY:

Always replace springs with new ones when overhauling engine. Test new ones on spring tension tester and insist that compression be within 10 per cent of the factory limits. In replacing springs, the closed coils should be placed next to the block so that the surge and pounding due to inertia forces can be reduced. This assists in preventing spring breakage. Weak valve springs permit bounce on seat with resultant wear of the face.

CAUSE . . .

Engine Detonation and Preignition



EFFECT:

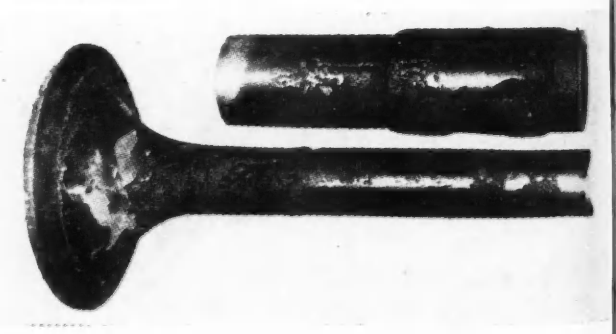
Shows up in hard deposits under head and on stem (left) and in spot burning of head (right). Extreme temperatures actually melt the valve material.

REMEDY:

Use good grade of fuel and adjust spark to the octane quality of the gasoline. Install spark plugs with correct heat range and keep plugs at peak operating efficiency. A plug with a cracked porcelain or faulty in other respects may cause a similar condition.

CAUSE . . .

Improper Lubricant



EFFECT:

Deposits form on outside of valve guide, under valve head and on the stem. The heat trapped in the guide causes excessive carbon formation under valve springs at the tip end.

REMEDY:

Since this condition has resulted from too high a valve stem temperature for the oil being used, operators experiencing this trouble should solicit the help of lubricant manufacturers in a move to select the proper oil for the particular engine and operating conditions. New oils now on the way may help to solve this problem.

A Systematized Fleet Safety Program

BY THE BUREAU OF HIGHWAY SAFETY .... NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC., WASHINGTON, D. C.

The Why and How of "Human Engineering"

The Why

SAFETY TEXT • NUMBER 5

THE biggest problem still facing management today—in highway safety or otherwise—remains a HUMAN and not a MECHANICAL one.

The science of mechanical engineering has advanced to the point where machines may be made to run perfectly, unerringly, and almost perpetually! Unfortunately, the same is not true of human beings.

When you buy a machine, it is purchased to function continuously and to do a perfect job. The machine usually does just that.

But when you acquire the services of a human being, just how that employee will perform is questionable. While a machine will operate only for the purpose for which it was designed, a human being may perform in many different ways depending upon his mental and physical characteristics—his ATTITUDE.

The degree of perfection attained by a machine can seldom be reached, but much can be done to improve human performance through HUMAN ENGINEERING or building of morale.

In this Text and the accompanying Instructions we do not attempt to cover all details of this subject, but confine ourselves only to that which is essential to point the way to better handling of employees (truck drivers, in particular) so that they may work with greater contentment and perform more efficiently and safely.

Developing Proper Attitude

When we speak of "attitude" we mean the state of mind of an individual—his outlook or enthusiasm toward his job. It is acquired from many sources. Habits, training, experiences, physical condition, emotional stability, social environment, etc.—all are contributing factors to attitude.

The attitude of your drivers affects not only your business but all persons using the public streets and highways.

Drivers who consider driving a motor vehicle as a right rather than a privilege—who demand their right of way regardless of circumstances—who are inconsiderate of the rights of others—who feel that accident prevention is not their responsibility—*possess poor attitudes.*

Those who hold respect for the Golden Rule of Life, "Do unto others as you would have others do unto you"—who respect and practice observance of all traffic rules and regulations—who are considerate of errors in others committed through ignorance or misunderstanding—*have developed good attitudes.*

You can measure your drivers' attitudes through personal observations, frequent free-answer interviews or checks, and proper analysis of accident reports and records covering their driving experience.

Poor attitudes may be improved by (1) establishing some sort of driver incentive plan: (2) appealing to the driver's pride of becoming a "professional driver": (3) improving your relations with the driver by encouraging and treating him with proper respect on all occasions and contacts.

A spirit of harmony, teamwork, enthusiasm and self-satisfaction must be developed among employees in any successful commercial enterprise.

Dealing with the "Accident-Prone Driver"

Accident records of a group of drivers will often show that despite similar driving exposure, a few have more accidents than others. Such drivers may be considered as "accident-prone." Men with consistently poor driving records will usually be found to be not mentally, physically or emotionally suited to their jobs. These characteristics often manifest themselves in spite of careful selection, training and supervision.

Intelligent studies of accident-prone drivers and the application of proper remedial measures will bring about a sharp improvement in their accident frequency and severity.

Each supervisor must determine from the driver's individual record when special attention is needed to reduce the chances for future accidents.

The *average* driver can become a safe driver once his limitations are pointed out to him and help is given to overcome his weaknesses.

(TURN TO NEXT PAGE, PLEASE)

The How of HUMAN ENGINEERING

SAFETY INSTRUCTION No. 5

THE science of "human engineering" cannot be applied successfully to groups. Best results are obtained by dealing with the individual.

You—as the owner, foreman or supervisor—are in close contact with your men and therefore have the best opportunity to study them.

First of all, you must know *your* job and how to deal with human beings. You must like and respect your fellow-man and have a sympathetic understanding of human and economic problems. You should mix wisdom and common sense with knowledge. You must recognize the hazards of the driver's job and know how to prevent accidents.

You must always keep in mind that every employee desires and expects a job with adequate compensation, fair treatment, and an opportunity for advancement. You should also remember that the employee needs recognition for good performance, credit for being intelligent and trustworthy, and a sympathetic understanding of his problems. He also wants good working conditions and mechanically safe equipment.

Your job is to develop in each of your drivers:

1. **A willingness to learn,**
2. **A proper mental attitude to job and company,**
3. **Loyalty, interest and enthusiasm,**
4. **Honesty and fidelity, and**
5. **A personal interest in safety.**

In training your men and building morale, you should encourage them to bring their troubles to you; shun the appearance of superiority; be slow to reprimand—but quick to praise. You should make known the reason for all rules or requests, base your statements upon facts, and avoid exaggeration. Never use sarcasm or cause undue embarrassment. Do not be too familiar with your men or obligate yourself to them.

The employee looks to his "boss" for information, guidance and inspiration, and would rather take instructions from him when it is known that he is best qualified to give them.

Only upon rare occasions will you find a truck driver who needs no instructions; on the contrary, most need to be told and instructed and retold and reinstructed.

Plan Instruction in Advance

When interviewing or instructing your drivers, plan your procedure beforehand and have it well organized. Discussion of the employee's family, hobbies, his work, etc., will help get him into a relaxed and receptive frame of mind. Make it clear that you are endeavoring to help him. Explain that you have been studying and observing his good and bad points.

One or more planned conversations with the employee may not effect a cure. You should make a careful and systematic follow-through to ascertain how the driver reacts on the job. If his reaction is favorable, commend him for his cooperation; if not, further treatment or other special attention is indicated.

When an analysis of a driver's record indicates accident-proneness, special attention and remedial measures are called for. In some instances where a driver possesses mental, physical or emotional shortcomings, even if of a temporary nature, which cannot be remedied quickly, he should be transferred to a non-driving job.

Some believe that discipline and penalties are necessary for every chargeable accident but do little else or nothing at all to educate and train drivers whose accident records demonstrate the need for it. Perhaps one reason is that discipline is the quick and easy way of dealing with the driver, while individual attention to the accident-prone driver usually necessitates extra coaching in the proper handling of vehicles and, by a planned interview, a reviewed course of instruction on the employer's rules and regulations and the driver's duties and responsibilities.

Where penalties are used, however, they should be fair, clearly understood and impartially enforced.

Best results may be obtained, however, through a calm, man-to-man discussion with your driver. Make it clear to him that his interests and those of his employer have been influenced adversely by his accident record and that improvement will be necessary.

Point out to him that accidents are caused—they don't just happen. Interest him in the responsibility he has to improve the company's operation so that he may enjoy steady employment, achieve advancement and improve his own standard of living.

Be constantly alert to determine the basic reasons for the accidents he has caused. This will aid you in determining what course of action is indicated.

Always explain your course of action to the driver and secure his willingness to cooperate.

It must be remembered that careful study and considerable intelligent effort by management is required to find out what type of special education and training is called for in each instance and to carry out the program decided upon.

Also bear in mind that

(1) **the problem of employee relations is the most important one facing industry today**
(2) **the motor transport industry has a tremendous supervisor training program ahead of it;**
(3) **the job is to take all drivers as they come and attempt to "build" them into safe drivers by developing the best technique and mental attitudes;**
(4) **a large employee turn-over may be indicative of poor training—poor building;**
(5) **to properly build men you must actually keep records of their characteristics and organize your interviews with them.**

SAFETY INSTRUCTIONS

In This Highway Safety Program for Commercial Vehicles Operators

THIS ISSUE: Human Engineering

PRECEDING ISSUES:
- Management Responsibility
- Driver Responsibility
- Driver Selection, Training and Supervision
- Accident Reports and Records

SUCCEEDING ISSUES:
- Visual Information . . . Contents . . . Awards
- Group Safety Meetings . . . Development of Safety Committees
- First-Aid Training
- Conservation of Equipment
- Unusual Highway Hazards; Winter Driving; Holiday Hazards; Night Driving; Highway-Railroad Grade Crossings
- Fire Prevention
- Safety Through Courtesy . . . Defensive Driving

Your Own Highway Safety Program

This and other installments are punched marked for removal and insertion in standard three-ring binder. Save them! Use them!

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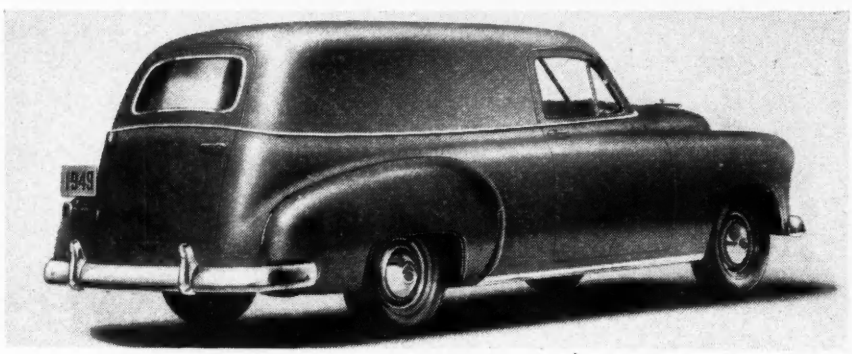
STYLELINE deluxe four-door sedan typifies '49 styling. Business coupe has similar appearance except for chrome strip and rear wheel skirting

SEDAN DELIVERY has passenger car chassis and "new look" treatment



'49 CHEVROLET

Features New Body, Shift, Suspension

Business coupe and sedan delivery among new models. Prices to be up about eight per cent

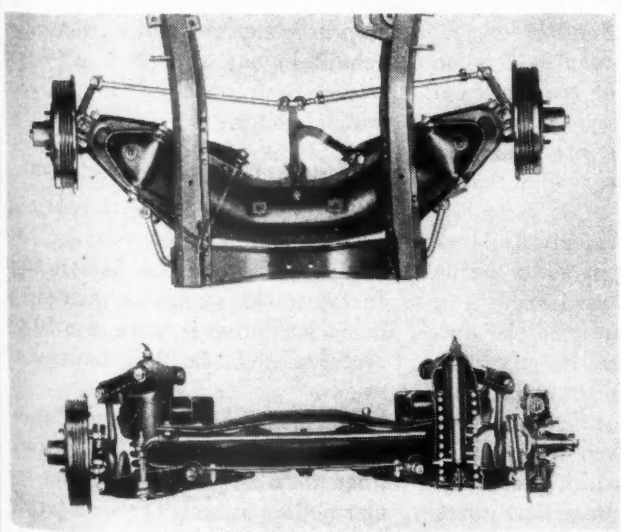
THE COMPLETELY restyled Chevrolet line for 1949 is wider, lower, more streamlined and includes a business coupe and sedan delivery. Price tags will be about 8 per cent higher (by weighted average) than corresponding '48 models, but there is promise of a production increase of 10 per cent. Such an increase would be beneficial since the division reports that unfilled truck orders still equal the entire 1948 production (estimated at 389,000 units).

While the chassis is unchanged in major details, it includes a number of notable improvements, among them movement of the engine 4 in. forward get the rear seat ahead of the axle. At the same time wheelbase has been reduced 1 in. to 115 in. Weight has been reduced about 4 per cent.

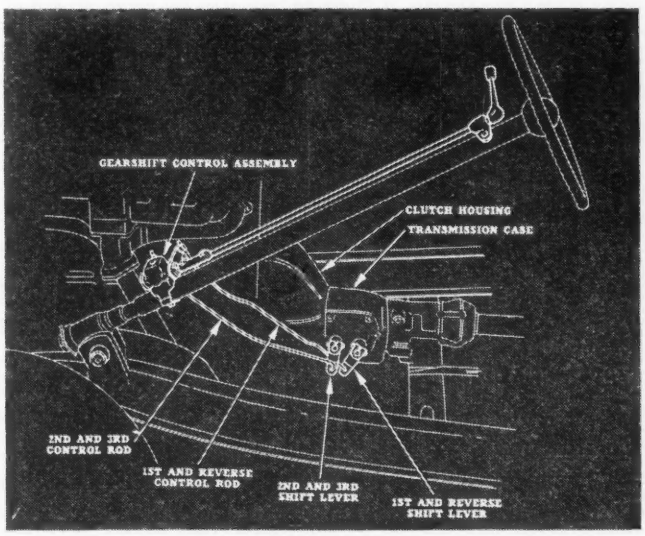
The vacuum type gear shift control has been replaced by a manual gear shift. The gear set remains the same as before except for the addition of a rear case extension to make up for the forward shifting of the powerplant, thus leaving the propeller shaft and torque tube unchanged.

(TURN TO PAGE 150, PLEASE)

FRONT END includes centerpoint steering (top) and new knee-action unit with shock absorber inside coil spring



MANUAL control replaces familiar vacuum shift. Transmission is unchanged except for new rear case extension



Tested Ideas

Skimmed from a Dairy Fleet

Taking on all problems as they come, this fleet strengthens fenders, devises a new way to insulate, has a string of shop tricks and even scraps own trucks

By Charles McCarty
Plant Manager, Alamito Dairy Co., Omaha, Neb.

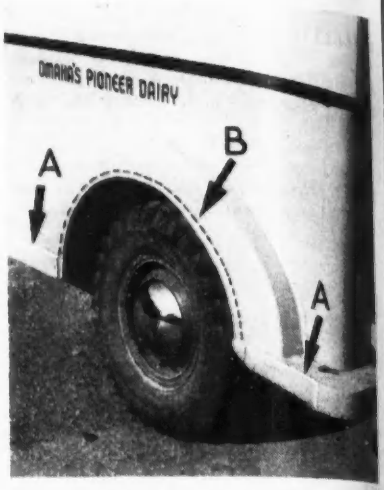


FIG. 1. Fenders are strengthened with angle irons at A, welding rod at B

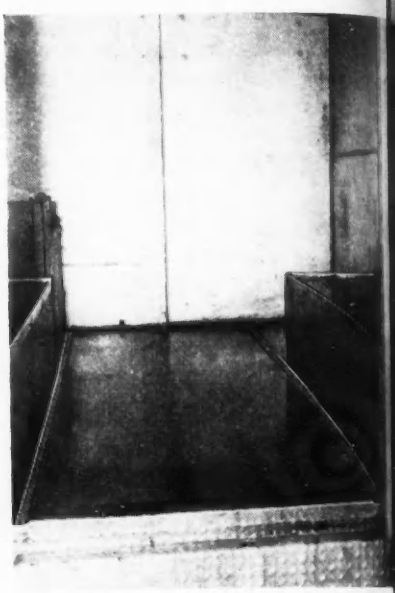


FIG. 3. Truck interior reveals plywood lining, diamond floor and drain

MANY A FLEET OWNER looks to the truck manufacturer for worked-out solutions to his problems when he should be digging them out in his own shop.

For some years now we have been trying to work out our own problems as they come up. Often these problems are solved by using some new development in the general field which had not yet been applied to vehicles in the dairy industry in our locality. Often our patterns are passed on for future adoption by the manufacturers who supply us and the dairy industry with trucks, bodies and accessories.

No Flimsy Fenders

FOR instance the rear fenders on our trucks covered too much of the tire, were of flimsy construction, and interfered with tire changing and inspection. They were easily damaged.

We designed an entirely new fender that lasts as long as the whole body (Fig. 1). We used angle iron at points A and reinforced the outside edge of the fender (B) with ¼-in. rod welded underneath. This gave it strength and stiffening. These specifications were given to the manufacturers who now furnish our bodies and all of our new ones have these improvements. First ones were either rebuilt in our own shop or worked over to our specifications by commercial shops.

Undercoating as Insulation

WE use undercoating to reduce ice consumption in trucks and have succeeded beyond our highest hopes. In the trucks we have insulated our ice consumption is more than 50 per cent less than in the non-insulated trucks.

We manufacture our own "snow" for packing with milk in the trucks when they are loaded out. Our regular bodies, although made especially

FIG. 2. A typical Alamito truck being refueled with automatic filler valve that saves time and gas

FIG. 4. Undercoating on slippery steps retards skids as well as corrosion

FIG. 5. When tires are inflated assembly is placed on this special base

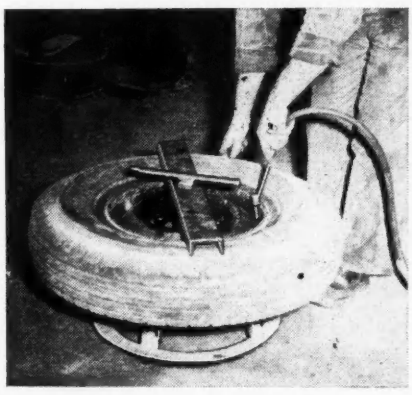


FIG. 6. Channel steel bar then prevents all possibility of flying rims

FIG. 7. Pneumatic spreader with convenient rack makes inspections easy

for the dairy industry, are uninsulated. The outside atmosphere is only the thickness of the metal away from the milk and ice.

When undercoating first came out we bought some to spray underneath our trucks in the conventional fashion. Then we thought that it might be a good thing sprayed on the interiors of our trucks. We put it on pretty thick—about ⅛ in.—and then sealed and lined our trucks with plywood panels which were placed over this insulation. (Fig. 3.)

We obtained more than a 50 per cent reduction in the use of ice. Ice will remain in these trucks when parked in the garage more than 24 hours. The trucks operate more quietly, too. We use the same system underneath the fenders and on the chassis.

Our bodies as normally manufactured rust out rapidly because of the constant dampness from melting ice. We rebuilt some of our bodies and changed specifications on new ones from the manufacturers to include heavier steel flooring made of what is commonly called diamond-steel tread—3/16 in. thick.

While remaking our bodies to suit our purpose better we found out

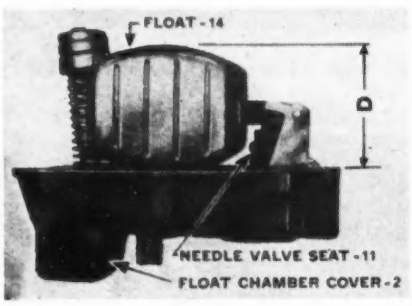
(TURN TO PAGE 190, PLEASE)

Factory Service news . . . Briefed for

Adjusting Zenith Float Level . . . Diamond T Valve Grinding . . . Federal Valve and

Autocar

Adjusting Zenith 129BW16 Float

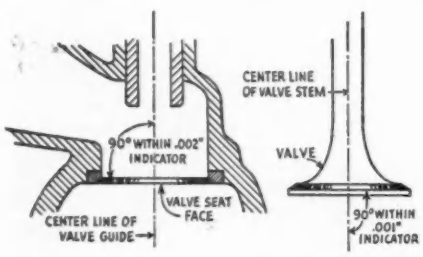


TO adjust fuel level on Zenith 129BW16 carburetor as used on Autocar models 6AD050 and 6AE-050, proceed as follows: remove carburetor cover and hold in inverted position. Measurement D (from machined surface of cover to top of float) should be 1 45/64. Float axle should extend about same distance on both sides of bracket. Float should move freely on axle.

Diamond T

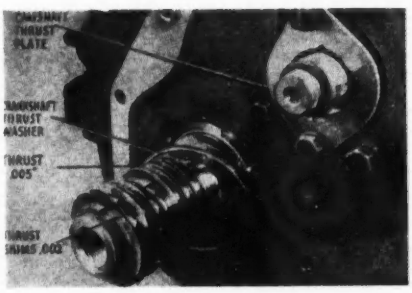
Valve Grinding Tips

VALVE seat face must be square with guide within .002 in. indicator reading. If the seat face width is appreciably widened in the grinding process, the top should be cut back with a 15-deg cutter. Grind the intake seats at 30 deg and the exhaust at 45 deg.



A minimum of grinding is preferred to prevent a thin edge on the valve head which might cause burning, warping or cracking. The valve head seat angle must be square with the stem to within .001 in. indicator reading. Grind intake valve seats to 30 deg and exhaust valves to 44 deg. Properly ground intake valves will show contact all around on approximately middle half of seat surface. Properly ground exhaust valves will show contact all around on approximately upper third of seat surface.

T6371 & T6427 Crankshaft Adjustment



CRANKSHAFT end thrust on the Continental T6371 and T6427 engines is taken by thrust flanges at the front main bearing. End play is controlled by the thickness of the shim pack under the crankshaft gear. When the crankshaft gear is replaced, check the amount of crankshaft end play and add or remove shims as required to hold the crankshaft end float between .004 in. and .006 in.

Federal

Camshaft Gear Lock

THE T6371, T6427 and B6427 engines. The method of locking camshaft gear has again been changed. Drilled nut which was wired to the gear tended to work loose. In the future a "Marsden" self-locking nut, part No. 1A6348 with lock A4804 will be used. The new nut should be tightened with a torque wrench to 150 lb. minimum. Lip of washer should be peened over for further safety.

Valve and Ring Failures

INVESTIGATIONS of operations in the field have disclosed a number of valve, piston and piston ring failures which are traceable directly to the use of low quality fuel.

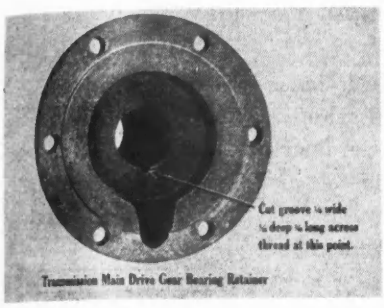
Tests have proven that a more satisfactory operation and extended valve, piston and piston ring life can be obtained by: (1) Retarding ignition initial advance to a degree less than specified for normal operation. In a series of tests with 62-63 octane gasoline, we found it necessary to retard the spark three to five deg to avoid a harmful detonation. (2) Adding lubricant to the gasoline. It is characteristic of low quality fuels to leave carbon, gum and lead deposits on parts in the combustion chamber. These conditions can be partially if not entirely eliminated by adding a lubricant to the gasoline.

Fleets from Manufacturers' Bulletins

Ring Failures . . . IHC Transmission Lubricant Leakage . . . Testing Studebaker Hydrovac

International Harvester

Transmission Lubricant Leakage

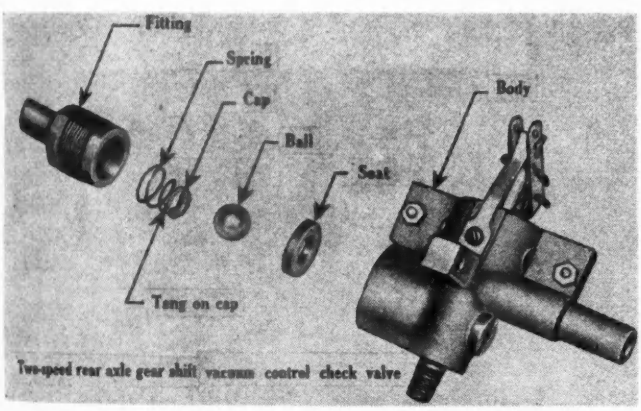


Transmission Main Drive Gear Bearing Retainer

WHERE cases of lubricant leakage through the transmission main drive gear bearing retainer into the clutch housing is being experienced, a drain notch or groove should be cut across the first thread at the bottom of the retainer bore. This will permit lubricant to drain back into the transmission case.

Two-Speed Axle Control Valve Wear

WEAR of the two-speed rear axle vacuum control check valve ball spring at the ball end on KS-5, KBS-5 to KBS-14 series chassis with vacuum control two-speed rear axle shift



Two-speed rear axle gear shift vacuum control check valve

has been eliminated on production chassis by the addition of a cap to the ball end of the spring. This provides a seat for the check valve ball. Spring cap IH No. 70 403 R1 and Spring IH No. 140 378 H should be installed to correct this condition.

Studebaker

Hydrovac Testing

SOME difficulty has been experienced in connecting the vacuum gage to the trailer control line port when testing Hydrovac operation in Studebaker trucks.

The factory recommends turning the atmospheric control valve cover one screw hole to the left (72 deg) from its original position as viewed from the valve end when the unit is off for repairs.

The control line running from the control valve cover to the rear of the large vacuum cylinder should be installed in the port next to the frame and the trailer port will point toward the center of the truck, allowing the installation of the vacuum gage.

Vented Capscrew for Rear Axle

SOME early 2R10 models did not have an air vent in the rear axle assembly, permitting build-up of internal pressures which might result in grease leaks.

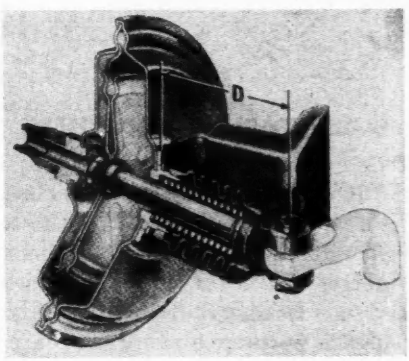
To provide an air vent the capscrew that holds the rear axle brake line tee to the axle housing has been changed in production. The new capscrew, part No. 678850, contains a 3/32-in. vent hole through its center to provide ventilation.

Eaton Mfg. Co.

Testing the Vacuum Shift

THERE is a very simple method to determine whether or not the vehicle's vacuum shift system has a leak.

1. Have vehicle on level ground, parking brake off and transmission in neutral.



2. Start motor with axle shift button in high speed range (up or out).

3. Race engine for a few seconds, release throttle and turn off ignition switch.

4. Measure distance (D) in figure 7 immediately.

5. At the end of ten minutes, rock truck by hand and remeasure distance (D). If this distance has not increased, the entire vacuum shift system can be considered vacuum tight. If, however, this distance (D) has increased, the system has a vacuum leak.

This assembly requires no maintenance. It cannot be repaired due to its construction and must be replaced as a unit.

Scrapbook

Of Practical Fleet Practices

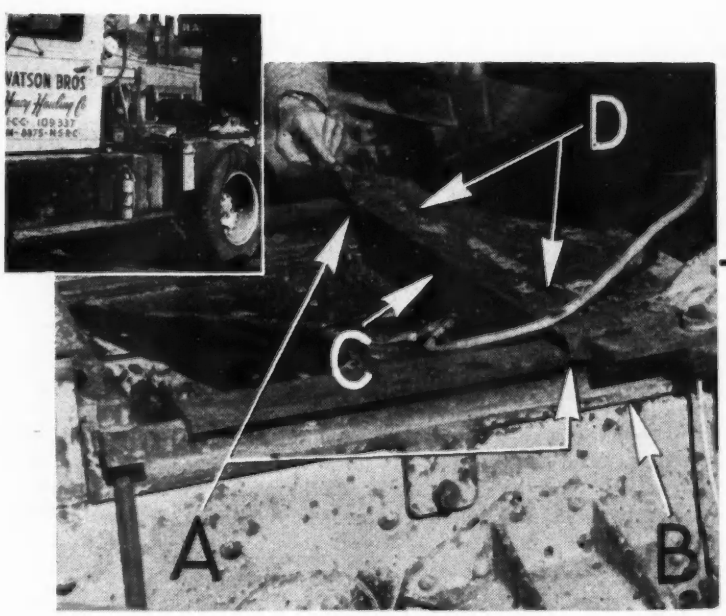
Lightweight Strengthener for Frame Crossmembers . . . An Adjustable Fifth Wheel for Different Type Trai

LIGHT-WEIGHT BRACE KEEPS FRAME ALIGNED

STEEL fish-tail wings are added to frame cross members to increase rigidity and strength in the main shops of the Mason and Dixon Lines, Inc., Kingsport, Tenn. The ordinary tubular cross members which cross the frame back of the cab and at the position of the front and rear springs do not always prevent frame twisting, according to W. R. Hilton, shop superintendent and this is particularly true of older frames.

The fish-tail wings are cut from ¼-in. sheet steel and welded to both sides on each end of the brace and to the bottom part of the frame channel. When new cross members are added or when frames are being repaired, M & D makes all new members in this style. Strength is increased many fold with but a few pounds of additional weight.

ADJUSTABLE FIFTH WHEEL

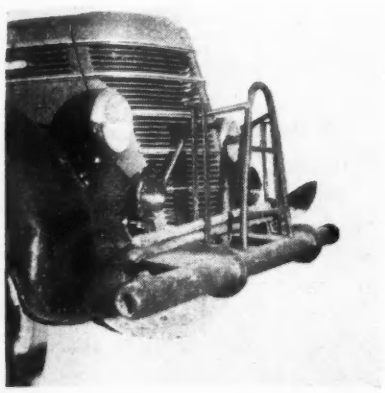


PROBLEM: To use a big tandem tractor on conventional trailers as well as on low-type heavy machinery trailers. When in correct position for a machinery trailer the fifth wheel is too far forward to couple with a conventional trailer, since the rear end of the frame would strike the trailer landing gear.

L. E. Erlewine, shop foreman, Watson Bros. Hauling Co., Omaha, Neb., solved the problem with a novel fifth wheel that moves back and forth.

A sheet steel base on which fifth wheel is mounted extends from near the back of the cab almost to the end of the frame. The fifth wheel is held down on this steel base by steel rails which permit it to slide the length of the steel base. The base, of course,

Trailers - - - Two Ways to Transport Long Bulky Tools Efficiently



TOOL RACK ON BUMPER

Where trucks are used to transport men and tools from job to job, the problem of keeping tools which are too large for the tool box is always at hand. The shop foreman of the Gulf Coast Division of Stanolind Oil & Gas Company has made a convenient rack behind the grille guard. Space behind the front grille protector is made by putting a "dog leg" in the upper part of the brace, made of ¾ in. bar stock.

The rack itself is made by butt welding four upright ¼ x 1 in. strap iron to the top of the plate which supports the main front bumper. By spacing these upright pieces so that a shovel handle will fit snugly, the shovels may be stacked one on top of the other and the rack will hold 10 shovels. A strap across the top holds tension on the rack so that when several shovels are in the rack there is no danger of one of them slipping out.

By providing a safe place to keep the shovels, Stanolind has materially increased its crew efficiency. The idea will work on virtually any make truck and can be used to transport many types of tools particularly in construction work.

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is bolted to the frame of the tractor in the conventional manner.

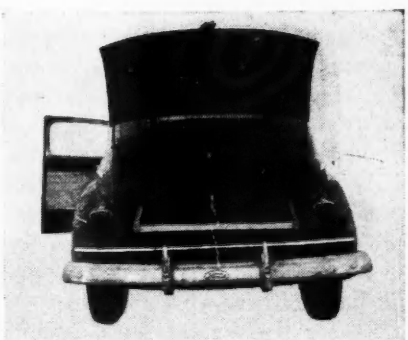
The next step was to provide positive, yet easily removed, fastening for the fifth wheel at two positions. This was accomplished by providing position notches (A) in the rail (B). A locking bar (C), provided with slots for hold-down bolts (D), can be knocked out when locking bolts are loosened. Movement of the fifth wheel on the plate is usually accomplished by butting it into the trailer. When pushed into position, the locking bar is in alignment and may be easily locked in place.

When changing to the machinery trailer, fifth wheel can be positioned by butting or pulling against the trailer, since on this type of trailer hook-up can be accomplished with fifth wheel in either position.

Before this two position fifth wheel was worked out it was necessary to tie up a big tractor for machinery trailer use alone, since the fifth wheel must be well forward for maximum weight distribution. Now any tractor can do the job.

Ideas That Work

Another assortment of helpful ideas picked up across the country by CCJ correspondents in their never-ending search for better ways of handling fleetmen's problems. These are the little things, often overlooked, that can pay big dividends.



SEDAN HAULS TOOLS

HALLIBURTON OIL WELL CEMENTING CO. with headquarters in Duncan, Okla., uses two-door sedans to transport men and their tools on long hauls even though the tools are too long for the average car. By removing the back seat, approximately 6 ft. of clear space can be obtained between the inside of the deck and the back of the front seat.

After the back seat is removed, a tool bed is constructed by running strips of oak two-by-fours lengthways in the bottom of the sedan, and building a bed of one-inch oak for flooring. A lip is built around the edge of the bed to protect the inside of the car, and dividers are placed lengthwise to keep the tools from banging together.

Plymouth, Dodge

To Introduce Shorter Wheelbase Models

Although not official, lower prices are indicated; all lines have new styling and mechanical changes

FROM THE FLEETMAN'S point of view the most significant revelation made at the Chrysler Corp. press preview on Jan. 14 was the fact that both Plymouth and Dodge will soon introduce shorter wheelbase models. The shorter Plymouth, to be available in all-steel station wagon, coupe and 2-door sedan models, will have a wheelbase of 111 in. compared with 118½ for the regular line. The smaller Dodge, to be offered as coupe, 2-door sedan and roadster (with lift-out windows and hand-operated top), will have 115 in. wb compared with 123½ for the regular line. It will be noted that both regular lines have longer wheelbases than previous models although this has been achieved without increase (in fact a slight decrease) in overall dimensions.

Prices Not Revealed

WHILE the showing was "on the record," no printed specifications or photographs were available so that all information had to be obtained by personal observation and through interviews with factory officials. Particularly guarded was any reference whatsoever to prices. The appearance of the shorter cars, however, coupled with trim and appointments much more austere than the larger lines or even previous models, points to the inescapable conclusion that both lines are aimed at lower priced markets. It is understood that production will get underway somewhat later than the regular lines which are expected early in March.

It is understood that in both cases engines and chassis are standard units, modified where necessary to fit the smaller wheelbases. General appearance and interior size appears very similar to the larger models.

Throughout all lines, and this includes Chrysler and DeSoto, styling is in keeping with the post war trend. The cars are lower (from 1⅝ to 2¼ in.) with no decrease in headroom (though tunnels are more pronounced), roomier and wider inside although slightly narrower outside. An important feature is that all fenders are still separate and removable, though much less conspicuous and well-blended into body lines. Rear doors are hinged at the center post, and all lines are offered with sloping or "bustle" backs.

Chassis Changes

OVERALL weights of all the 1949 Chrysler models was not given officially, but it is reported that they are only very slightly increased (less than 100 lbs. for the one with the largest increase), due perhaps to the greater glass area.

Although the basic mechanical units of Chrysler Corp. cars remain relatively unchanged, each division has incorporated many detail improvements. The increase in wheelbase has been accomplished by moving the rear axle back and the front suspension forward, at the same time reducing the sheet metal overhang at both ends. This process necessarily has changed weight distribution. So far as we could learn weight distribution now is about 57 per cent at the front and 43 per cent at the rear. This change also has made it necessary to provide new frames for all models. They remain basically of the same type as before but contain features necessary to accommodate the relocated running gear elements.

Horsepower has been stepped up moderately in all engines in various ways. Compression ratio is upped to 7.0 to 1 on all engines except the Chrysler eight, the latter being made 7.25 to 1. This has brought with it new cylinder heads, and on several models changes in combustion chamber form to provide better mechanical clearance for the valves. In addition, the engines have been fitted with new intake manifolds to provide better breathing. On at least several engines Chrysler has added new camshafts with high lift cams.

Plymouth Automatic Choke

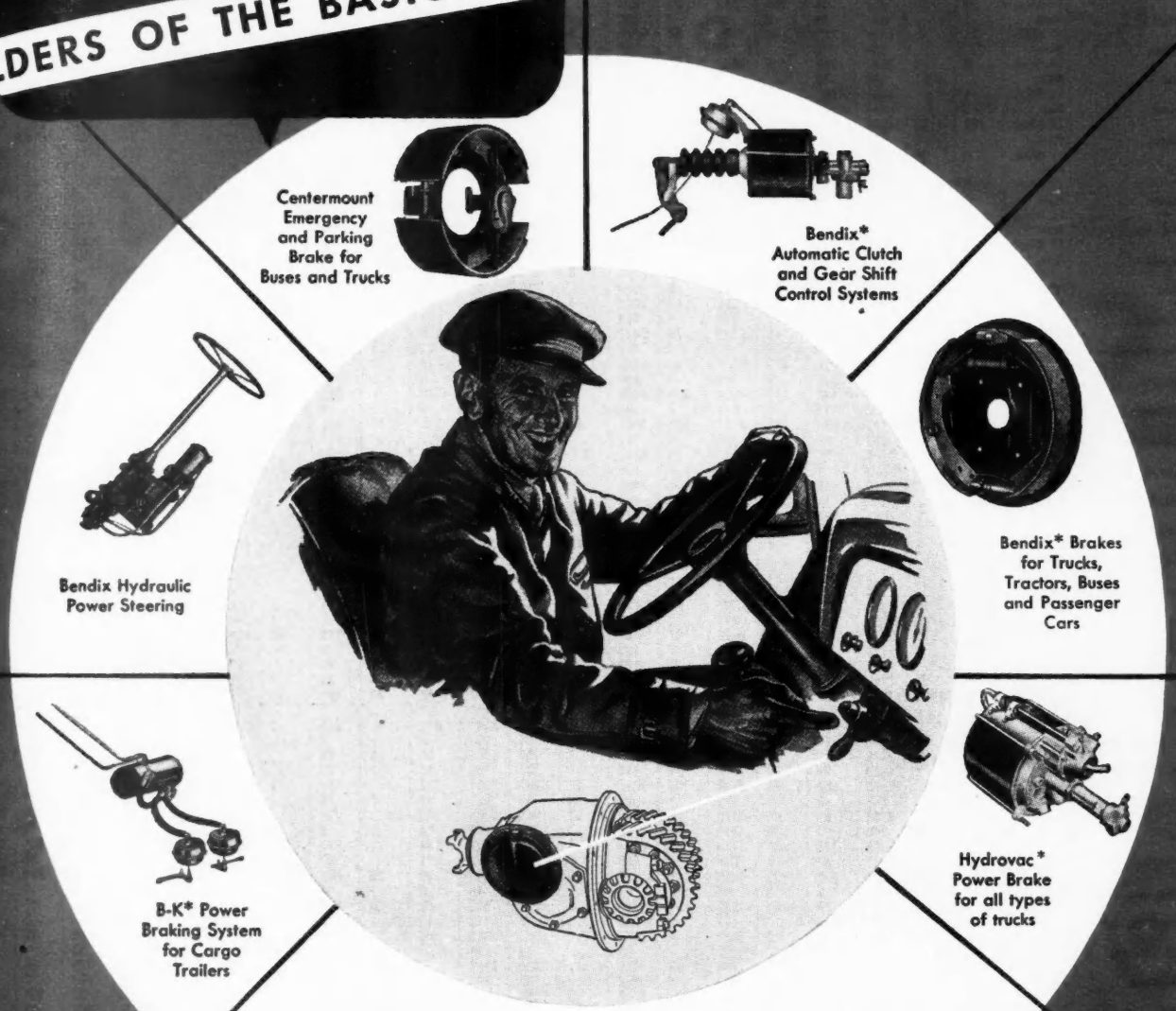
THE ignition ssytem has been improved by the adoption of the new waterproof type distributor which also includes a built-in 10,000 ohm resistor. The new heavy-duty coil is mounted on the engine to permit use of an extremely short high tension lead to the distributor. Ignition cables are coated with neoprene to prevent leakage and protect against water. Plymouth will have a 40-amp. generator instead of the 35-amp. unit previously used and also will have a 4½ in. starter instead of 4-in. It also will be equipped with an automatic choke as standard equipment for the first time.

Another minor feature of unique interest is the new ignition switch which also combines the function of a starter switch. The ignition key is first turned to "on" position, then as it is turned a little further to the right it acts as the starter switch. When the engine fires the key is returned to the "on" position.

Speculation has been rife concerning the wide adoption of cycle-welded bonded brake linings. While it has been known that Chrysler has supplied bonded linings on many of the truck models and to some extent in passenger cars, there has been no official confirmation of this. We learn now that before long all passenger cars will have bonded linings. At the present moment only DeSoto is said to be supplied 100 per cent.

Bendix Products

BUILDERS OF THE BASICS OF BETTER MOTOR VEHICLES


Centermount Emergency and Parking Brake for Buses and Trucks
Bendix* Automatic Clutch and Gear Shift Control Systems
Bendix Hydraulic Power Steering
Bendix* Brakes for Trucks, Tractors, Buses and Passenger Cars
B-K* Power Braking System for Cargo Trailers
Hydrovac* Power Brake for all types of trucks

BENDIX VACUUM-POWER SHIFT

for two-speed axles—smooth, fast, easy!

Here's another control problem solved by Bendix Vacuum-Power! With a Bendix Vacuum-Power chamber on the axle and a "Preselector" control on the instrument panel (or gear shift lever), truck drivers get an easy, positive, fast-acting, *power* shift. A flick of the finger and intake manifold vacuum does the actual work of shifting! Low original and maintenance costs make it your logical choice.

This Bendix Vacuum-Power Shift has proved a worthy companion to Timken-Detroit's great line of 2-speed truck axles, with a record of many years and billions of miles of dependable performance.

*REG. U.S. PAT. OFF.

BENDIX PRODUCTS
DIVISION of Bendix AVIATION CORPORATION
SOUTH BEND 20, INDIANA

New Truck Registrations by Makes by States*

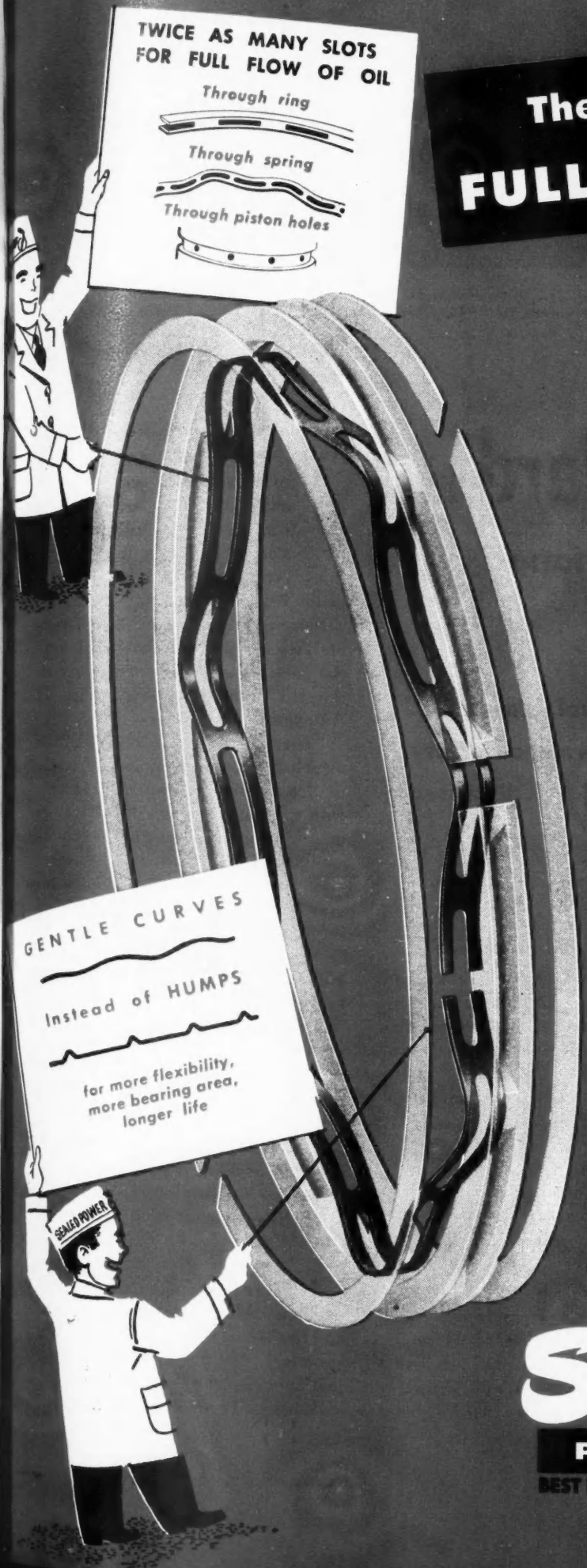
STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-national	Mack	Osh-kosh	Reo	Ster-ling	Studе-baker	Ward La France	White	Willys	All Others	Total
Alabama	Nov.	.....	.....	748	12	4	211	4	379	.....	222	212	16	.....	28	.....	90	.....	17	111	14	2,000
	11 Mos.	1	.....	7016	72	25	1897	34	4781	.....	1725	2314	151	.....	233	.....	821	.....	143	1345	54	20,012
Arizona	Nov.	.....	.....	221	3	.....	108	.....	167	.....	66	33	2	.....	6	.....	33	.....	6	54	8	707
	11 Mos.	3	.....	1635	10	22	715	15	1363	2	426	412	13	.....	88	7	374	.....	52	346	45	5,533
Arkansas	Nov.	.....	.....	375	2	.....	87	1	176	.....	78	46	.....	.....	16	.....	50	.....	10	111	1	888
	11 Mos.	.....	.....	6058	98	1	1645	28	4474	4	1216	1832	44	.....	301	.....	726	1	93	1744	18	18,080
California	Nov.	12	.....	1660	50	30	768	3	813	15	516	381	12	.....	21	2	435	.....	38	226	51	5,030
	11 Mos.	192	24	16613	387	428	8947	64	12589	72	5801	5504	291	6	226	88	4106	.....	416	3474	618	59,624
Colorado	Nov.	.....	.....	281	7	.....	141	2	169	.....	95	118	1	.....	4	.....	44	.....	7	92	.....	961
	11 Mos.	7	.....	3321	133	39	1240	59	2656	36	820	1689	19	.....	79	.....	490	.....	59	1077	11	11,736
Connecticut	Nov.	34	55	315	19	14	170	21	242	2	91	209	34	.....	11	1	54	.....	15	72	23	1,382
	11 Mos.	111	125	2253	150	133	948	97	1873	13	614	1153	201	.....	81	9	490	.....	103	765	87	9,189
Delaware	Nov.	1	2	89	1	2	39	.....	58	1	33	36	1	.....	1	.....	15	.....	2	10	9	276
	11 Mos.	11	14	851	24	18	422	3	746	1	257	397	23	.....	14	.....	122	.....	26	111	28	3,068
Dist. of Columbia	Nov.	9	14	61	2	2	19	2	105	.....	29	65	2	.....	4	.....	9	.....	1	13	5	342
	11 Mos.	24	20	872	44	100	343	25	924	.....	335	513	51	.....	41	1	115	.....	29	193	20	3,650
Florida	Nov.	1	.....	497	15	2	132	2	251	1	70	86	13	.....	5	.....	69	.....	16	116	8	1,284
	11 Mos.	21	.....	6127	125	34	1906	58	4161	4	1035	1568	176	.....	129	.....	842	2	170	1380	163	17,901
Georgia	Nov.	.....	.....	834	12	.....	180	6	350	.....	144	150	8	.....	20	.....	86	.....	10	138	8	1,944
	11 Mos.	4	1	8841	259	8	2552	82	6885	3	1618	3149	220	.....	303	.....	1223	.....	200	1902	58	27,286
Idaho	Nov.	.....	.....	159	12	.....	59	4	103	.....	59	61	1	.....	9	.....	54	.....	4	84	5	614
	11 Mos.	1	.....	1969	102	10	782	32	1509	4	617	969	49	.....	148	.....	649	2	54	881	58	7,836
Illinois	Nov.	5	1	971	48	16	276	4	478	2	196	415	15	.....	23	.....	149	.....	17	182	11	2,989
	11 Mos.	155	10	14968	1046	361	5319	204	9355	24	2956	7890	368	.....	735	9	2343	4	601	3487	268	50,101
Indiana	Nov.	.....	1	594	19	10	246	4	414	1	284	357	10	.....	27	.....	227	.....	44	156	12	2,428
	11 Mos.	3	20	6622	268	167	2497	111	5256	7	1973	3853	126	.....	273	.....	1625	.....	428	1773	187	25,199
Iowa	Nov.	.....	.....	506	21	2	172	.....	279	1	141	204	2	1	11	.....	101	.....	7	96	3	1,547
	11 Mos.	2	.....	7059	381	58	2445	29	5385	16	1351	3690	109	4	308	.....	1127	2	212	1821	31	24,030
Kansas	Nov.	.....	.....	555	13	.....	187	11	289	.....	88	111	3	.....	5	.....	90	.....	5	80	5	1,442
	11 Mos.	1	3	7519	212	23	1941	134	4649	4	1154	2598	31	.....	283	.....	1093	.....	111	1130	56	20,922
Kentucky	Nov.	7	.....	518	19	16	124	3	331	1	161	190	2	.....	24	.....	97	2	8	275	6	1,784
	11 Mos.	27	.....	5757	250	44	1603	134	4387	1	1350	2337	81	.....	341	.....	712	8	109	3146	62	20,349
Louisiana	Nov.	.....	.....	351	13	.....	110	.....	212	.....	95	77	9	.....	5	.....	47	.....	3	69	10	1,001
	11 Mos.	4	.....	4942	157	29	1501	15	3999	8	927	1873	86	.....	105	.....	708	.....	101	1192	110	15,557
Maine	Nov.	.....	.....	182	.....	2	41	6	119	.....	58	55	4	.....	10	.....	31	.....	.....	35	1	544
	11 Mos.	2	18	2057	8	29	565	40	1648	1	606	904	71	1	136	6	353	1	20	473	20	6,869
Maryland	Nov.	3	11	386	7	2	132	4	177	.....	114	93	14	.....	7	.....	50	1	8	38	4	1,061
	11 Mos.	58	95	4030	76	66	1387	79	2667	8	796	1543	176	.....	147	5	495	4	126	641	32	12,431
Massachusetts	Nov.	17	11	383	19	15	182	3	313	2	84	164	23	1	15	1	70	.....	13	52	3	1,371
	11 Mos.	132	139	4173	208	416	2007	46	4282	19	1111	2134	319	6	161	58	828	14	185	743	66	17,048
Michigan	Nov.	4	2	747	9	9	286	5	466	.....	194	146	8	.....	11	.....	100	.....	11	100	3	2,101
	11 Mos.	46	44	10059	190	343	4802	204	9479	6	3114	3022	139	.....	395	1	1408	5	372	2246	103	35,976
Minnesota	Nov.	.....	.....	400	15	8	171	7	295	7	88	158	3	1	5	.....	92	.....	9	63	6	1,328
	11 Mos.	52	1	6185	270	86	2437	165	5085	38	1251	3532	121	12	201	9	1225	12	241	1328	54	22,308
Mississippi	Nov.	.....	.....	527	21	.....	195	4	301	.....	243	140	12	.....	18	.....	82	.....	14	86	6	1,661
	11 Mos.	.....	.....	5785	91	.....	1518	26	4109	.....	1310	1668	117	.....	162	.....	632	.....	78	1183	33	16,712
Missouri	Nov.	.....	.....	763	4	9	287	5	435	.....	174	189	2	.....	45	.....	115	.....	6	120	5	2,189
	11 Mos.	4	7	9635	197	153	3191	32	6806	.....	1905	3432	82	.....	212	.....	1105	1	282	2020	79	29,143
Montana	Nov.	.....	.....	180	11	5	50	3	123	.....	54	67	.....	.....	16	.....	41	.....	1	106	.....	689
	11 Mos.	7	.....	2502	177	13	944	78	2072	11	635	1374	28	2	182	.....	530	5	62	1303	31	9,988
Nebraska	Nov.	.....	1	312	29	1	98	1	168	2	90	98	2	.....	4	.....	66	.....	5	82	3	969
	11 Mos.	.....	3	4371	395	7	1600	33	3148	12	911	2481	77	1	87	.....	755	.....	124	1439	32	15,474
Nevada	Nov.	.....	.....	28	2	.....	14	.....	14	.....	5	9	.....	.....	.....	.....	8	.....	.....	6	1	87
	11 Mos.	.....	1	422	16	1	230	2	341	4	120	171	4	.....	5	.....	133	.....	5	105	11	1,571
New Hampshire	Nov.	.....	.....	60	.....	3	17	1	38	.....	18	38	2	.....	1	.....	10	.....	.....	19	.....	287
	11 Mos.	6	13	826	15	37	325	6	723	1	198	323	46	.....	31	2	129	.....	14	224	12	2,931
New Jersey	Nov.	27	39	557	36	15	292	17	347	1	264	259	53	1	6	1	143	.....	37	122	7	2,224
	11 Mos.	202	376	5873	384	381	2422	147	4483	21	2254	2809	589	1	179	10	1103	12	358	1616	134	23,354
New Mexico	Nov.	.....	.....	143	6	.....	49	2	123	.....	61	42	2	.....	1	.....	16	.....	5	14	1	466
	11 Mos.	2	.....	1929	51	4	545	21	1272	2	422	590	19	.....	24	.....	236	.....	42	270	20	5,449
New York	Nov.	46	59	1140	58	46	648	18	646	8	381	499	88	4	39	2	226	7	74	258	29	4,298
	11 Mos.	551	1003	13030	1080	867	7831	445	10332	117	4826	7427	1749	62	849	50	2675	140	1052	3953	478	58,529
North Carolina	Nov.	5	.....	766	6	1	229	5	414	.....	124	185	23	.....	7	.....	117	.....	32	163	16	2,083
	11 Mos.	47	2	8293	100	60	2787	74	6304	135	1043	2281	510	.....	210	2	1204	.....	292	2075	242	25,671
North Dakota	Nov.	.....	.....	250	10	1	57	5	163	1	56	106	7	.....	2	.....	51	.....	1	81	1	792
	11 Mos.	.....	.....	2116	142	1	696	66	1829	7	397	1384	50	1	73	.....	455	.....	28	853	4	7,902
Ohio	Nov.	17	2	1189	20	25	472	16	744	.....	309	365	16	.....	23	.....	206	1	76	215	29	3,728
	11 Mos.	126	22	12375	354	396	5166	222	9665	27	3369	5952	373	.....	482	1	1988	6	904	2890	239	44,587
Oklahoma	Nov.	.....	.....	566	8	4	139	1	344	8	109	223	8	.....	15	.....	84	.....	12	119	1	1,639
	11 Mos.	4	.....	6353	64	44	1873	26	4947	53	1088	2994	49	.....	238	.....	787	1	156	1561	42	20,178
Oregon	Nov.	.....	.....	248	7	4	134	2	174	.....	112	110	4	.....	9	.....	74	.....	8	80	26	992
	11 Mos.	65	1	3596	111	24	1913	84	2607	6	1316	1837	134	.....	117	27	910	.....	183	1309	325	14,545
Pennsylvania	Nov.	45	67	1233	53	7	608	17	828	.....	431	485	71	.....	38	3	264	3	106	276	36	4,571
	11 Mos.	403	706	13576	715	135	6673	304	11433	12	4459	6839	1158	25	673	50	2945	8	1162	3828	314	55,318
Rhode Island	Nov.	5	.....	141	2	8	65	.....	61	.....	24	48	4	1	2	.....	16	.....	5	18	6	400
	11 Mos.	100	26	1047	76	145	520	10	799	.....	294	632	57	2	68	7	211	.....	82	243	41	4,360
South Carolina	Nov.	.....	.....	408	3	.....	117	2	234	.....	82	116	10	.....	4	.....	57	.....	8	65	2	1,108
	11 Mos.	2	.....	4306	45	5	1189	19	2787	.....	691	918	95	.....	114	..	433	.....	101	786	45	11,534
South Dakota	Nov.	.....	.....	159	25	1	51	.....	88	.....	44	95	.....	.....	1	.....	35	.....	2	83	..	504
	11 Mos.	.....	.....	1693	168	5	746	44	1315	.....	408	1481	17	.....	106	.....	389	.....	28	920	24	7,324
Tennessee	Nov.	.....	.....	643	9	1	156	4	267	.....	196	130	9	.....	14	.....	91	.....	25	121	7	1,673
	11 Mos.	8	4	8140	179	38	2254	154	5747	3	2294	3130	204	.....	284	.....	1070	.....	278	1722	108	25,617
Texas	Nov.	3	.....	1544	14	15	483	5	874	.....	436	481	16	.....	15	.....	254	.....	39	343	46	4,369
	11 Mos.	54	20	19603	387	170	6838	108	14604	7	4113	7776	336	.....	454	.....	2782	2	742	5063	472	63,731
Utah	Nov.	.....	.....	126	5	1	28	.....	109	.....	45	43	2	.....	1	.....	27	.....	2	18	4	411
	11 Mos.	.....	.....	1483	91	19	590	30	1231	6	481	700	37	.....	43	.....	331	.....	41	454	52	5,589
Vermont	Nov.	.....	.....	78	2	3	16	1	55	.....	34	34	.....	.....	1	.....	16	.....	2	45	1	298
	11 Mos.	6	17	937	28	17	312	22	886	1	326	582	52	6	58	3	242	10	30	483	25	4,043
Virginia	Nov.	6	4	624	4	8	168	7	516	.....	165	162	11	.....	7	.....	113	.....	19	117	2	1,933
	11 Mos.	41	26	6945	130	85	2075	113	5873	6	1331	2128	150	.....	176	.....	911	2	223	1510	84	21,809
Washington	Nov.	1	.....	274	9	4	114	.....	162	.....	99	136	4	.....	9	5	67	.....	209	64	68	1,229
	11 Mos.	19	.....	4141	144	131	1991	26	4009	11	1251	2102	117	.....	149	26	1005	.....	346	1047	192	16,707
West Virginia	Nov.	.....	1	227	4	3	106	7	152	.....	108	69	13	.....	5	.....	46	.....	12	90	2	845
	11 Mos.	23	40	2945	77	31	1236	90	2384	7	1072	986	153	.....	135	1	419	7	165	1502	47	11,329
Wisconsin	Nov.	5	.....	601	22	20	217	8	485	6	173	305	4	1	26	.....	117	.....	28	123	10	2,151
	11 Mos.	31	.....	6197	291	156	2184	103	4599	61	1381	3293	126	31	301	17	990	1	289	1578	75	21,709
Wyoming	Nov.	1	.....	94	9	.....	43	.....	76	2	19	53	2	.....	3	.....	23	.....	2	39	4	370
	11 Mos.	2	.....	1171	105	4	452	8	923	7	211	594	9	.....	35	.....	249	4	21	681	18	4,494
Total	November, 1948	254	270	23694	707	319	8892	223	14125	61	6764	7854	546	10	580	15	4358	14	981	5048	511	75,024
Total	November, 1947	285	319	24518	915	404	10221	552	10945	118	4525	9028	981	23	1026	47	3458	33	1074	4836	429	73,737
Total	11 Months, 1948	2560	2781	278417	10083	5367	106012	3911	213358	788	68959	118258	9205	180	10153	387	46370	282	10939	71616	5308	964,992
Total	11 Months, 1947	4036	3930	207870	9769	4522	118481	5537	181527	1116	44840	104650	10109	222	11952	545	38393	474	12084	45324	6261	811,442

* Data from R. L. Polk & Co.

SOUTH BEND 20, INDIANA

and billions of miles of dependable performance.
*REG. U.S. PAT. OFF.

NEW SEALED POWER MD-50 STEEL OIL RING



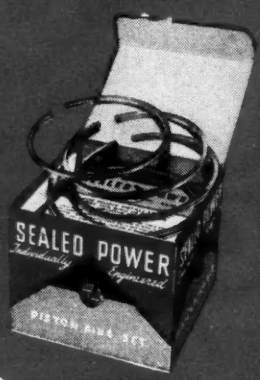
The only ring with the FULL-FLOW SPRING

Saves Oil! Saves Gas! Seals Power!

All over America—from coast to coast—mechanics say the Sealed Power MD-50 Steel Oil Ring controls oil as no other piston ring does! They say it works even in tapered and out-of-round bores! They say it restores original power—that engines start easier—that ring jobs last longer! Here are six exclusive advantages of THE ONLY RING WITH THE FULL-FLOW SPRING:

1 Improved oil economy
2 More spring action for steel segments
3 Leaves all slots and oil holes open
4 Maintains tension for varied groove depth
5 Greater bearing area for longer life
6 Retains original efficiency for life of ring

Sealed Power "X" Sets for all popular cars and trucks feature the MD-50 Steel Oil Ring—the only ring with the Full-Flow Spring. Sold by leading distributors everywhere—or write SEALED POWER CORPORATION, Muskegon, Michigan.



Sealed Power

PISTON RINGS

BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

Addressing convention (left to right) are: J. L. S. Snead, Jr., Consolidated Freightways, Inc.; Karl M. Richards, AMA; Harrison Rogers, Rogers Bros. Corp. (re-elected president of TTMA), and E. J. Lucas, Kingham Trailer Co.

Trailer Standards

To Implement Interchange

. . . advocated at trailer makers annual convention. Better integrated combinations, performance ability ratings and higher production goals also discussed

"COOPERATION" was the central theme of the eighth annual convention of the Truck-Trailer Manufacturers Association at Edgewater Park, Miss., Jan. 17 to 19, and various speakers urged the need for cooperation. . . .

(1) In the development of design standards to promote efficient interchange of trailers among carriers;

(2) Between power unit and trailer manufacturers in the design of better integrated combinations;

(3) Between users and truck and trailer manufacturers in coping with the public demand for performance ability ratings;

(4) Among trailer manufacturers and between management and labor for the attainment of higher production goals.

Snead: "Standardization"

DESIGN standardization was advocated by J. L. S. Snead, Jr., vice-president of operations and maintenance of Consolidated Freightways, Inc., Portland, Ore., and newly elected vice president of the Transportation & Maintenance Activity of the Society of Automotive Engineers. Design standards which he advocated to facilitate interchange of trailers were:

Wheelbases, fifth wheel heights, fifth wheel locations, landing gear locations, frame drop locations, weight distribution, cab clearance, electrical voltage, tire sizes, means of brake actuation; and (for full trailers) pintle hook, drawbar eye, drawbar length, body clearance, safety chain or cable attachment, and the wheelbase-pintle-hook-fifth-wheel-location relationships which govern tracking.

As for coordination between power unit and trailer manufacturers to provide for integrated combinations, Mr. Snead proposed the formation of joint committees of representatives of the Automobile Manufacturers Association, Truck-Trailer Manufacturers Association, American Trucking Associations and the particularly interested branches of the Society of Automotive Engineers.

"There is a need," he said, "for establishment of categories of trucks or truck-tractors, designed for use with specific categories of full trailers or semitrailers in designated vehicle-combination weight ranges. Properly synchronized brakes on combinations may be obtained only by exchange of information between the engineers designing the units to be used in combinations. Each needs to know what brake factors the other will use in designing his unit. Air reservoir capacities must be balanced between the vehicles forming a combination. Truck or truck-tractor electrical systems must be designed to adequately handle combination requirements. And the parking brake must be designed for the combination it will be expected to stop or hold in order to comply with I.C.C. Safety Regulations."

A higher percentage of parts interchangeability between power unit and trailer is also needed by fleet operators, Mr. Snead said. This is particularly true of brake lining, brake shoes, brake drums, wheel bear-

(TURN TO PAGE 228, PLEASE)

Truck Specifications Table

OF CURRENT PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

Key to Definitions, References and Abbreviations

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

(2) International Harvester—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

Also the company reserves the privileges of assigning special gross vehicle ratings for any chassis providing in the opinion of its engineering department, the type of service justifies the new rating without decreasing the safety factor designed into the truck.

(a)—Available with Two-Speed Axle designated KBS Models.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
BW—Bendix-Westinghouse
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
HS—Hall-Scott.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken-Detroit Axle Co.
Tw—Timken-Detroit—Westinghouse.
TW—Timken-Detroit—Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Wg—Wagner.
Ws—Westinghouse.
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
—All wheels.

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.
D or Dp—Dual Primary

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cc—Composite Front, Cast Iron in rear.
Ce—Centrifuse.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.
Z—Reinforced (X) member frame, box type sections.

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
¾—Three Quarters Floating.
½—Semi-Floating
T—Torque Tube

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

GOVERNOR STANDARD

Y—Yes.
N—No.

(Turn to Page 104, please)

(Continued from Page 103)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number	Main Bearings: Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	TRANSMISSION: Forward Speeds	REAR AXLE: Make and Model	REAR AXLE: Gear and Type	REAR AXLE: Drive & Torque	REAR AXLE: Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	BRAKES SERVICE: Lining Area	BRAKES SERVICE: Drum Area	BRAKES SERVICE: Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	FRAME: Type
	Available																															
1	(c.o.e.) 200				15000	5500●	7.00/20D	8.25/20	Wau BM	6–3½x4 ¼	263	5.9	178	78–2800	7–2 ⅛x10 ¼		N	WG T9	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534	a	TX	.....	10x3x ¼	T
2	(c.o.e.) 225				16500	6200●	7.50/20D	8.25/20	Wau BZ	6–4x4 ¼	320	5.9	235	105–3200	7–2 ⅛x10 ¼		N	WG T97	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534	a	TX	.....	10x3x ¼	T
3	(c.o.e.) 250				20000	6400●	8.25/20D	9.00/20	Wau BZ	6–4x4 ¼	320	5.9	235	105–3200	7–2 ⅛x10 ¼		N	Fu 5A330	5	Tim H100DPH	HF	R	** –6.80	Tim 32502H	L4IHV	344	584	a	TX	.....	10x3x ¼	T
4	(c.o.e.) 400				22000	6800●	9.00/20D	10.00/20	Wau BZ	6–4x4 ¼	320	5.9	235	105–3200	7–2 ⅛x10 ¼		N	Fu 5A330	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV	370	642	a	TX	.....	12x3x ¼	T
5	(c.o.e.) 500				23000	7500●	9.00/20D	10.00/20	Wau MZA	6–4 ¼x4 ¾	404	5.6	285	130–3000	7–2 ⅝x12 ½		Y	Fu 5F430	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV	370	642	a	TX	.....	12x3x ¼	T
6	(c.o.e.) 550				28000	8100●	10.00/20D	11.00/20	Wau MZA	6–4 ¼x4 ¾	404	5.6	285	130–3000	7–2 ⅝x12 ½		Y	Fu 5F430	5	Tim Q100DPH	HF	R	** –7.80	Tim 26452H	L4IHV	458	846	a	TX	.....	12x3x ¼	T
7	(c.o.e.) 550 X				32000	9600●	10.00/20D	11.00 24	Wau MZA	6–4 ¼x4 ¾	404	5.6	285	130–3000	7–2 ⅝x12 ½		Y	Fu 5F430	5	Tim S200DPH	2F	R	** –7.84	Tim 26452H	L4IHV	576	1054	a	FD	.....	14x3x ☆	T
8	(c.o.e.) 600				28000	10000●	10.00/20D	11.00/24	Wau 140 GK	6–4 ½x5 ½	525	6.4	425	172–2600	7–3 ¼x13 ¾		Y	Fu 5A650	5	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x ☆	T
9	(c.o.e.) 601				28000	10900●	10.00/20D	11.00/24	Wau 145 GK	6–5 ¼x6	779	6.2	595	240–2400	7–3 ½x17 ¾		Y	Spi 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x ☆	T
10	(D) (c.o.e.) 602				28000	11200●	10.00/20D	11.00/24	Cum HB600	6–4 ⅞x6	672	17. 500		150–1800	7–4 ½x16 ½		Y	Spi 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x ☆	T
11	Biederman NSH		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 ½	339	6.9	272	131–3200	7–2 ½x10 ⇕		N	Fu 5A330	5	TimH700DPH	8F	H	** –7.2	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x ¼	C
12	NSD		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 ½	339	6.9	272	131–3200	7–2 ½x10 ⇕		N	Fu 5A330	5	TimH700DPH	2D	H	6.13–8.15	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x ¼	C
13	Chevrolet FP	835	116	....	4600	▼2590	6.00/168	158	O-Thrift Mas.	6–3 ½x3 ¾	216	6.5	174	90–3300	4– ♦ ♦		N	Own	3	Own	Hy	T	** –4.11	Tim 32502H	O4IH	164	242	Co	2I	39	5¾x2⅛x☆☆	C
14	FR	945	125	....	♦5800	▼2935	158	7.00/178	O-Thrift Mas.	6–3 ½x3 ¾	216	6.5	174	90–3300	4– ♦ ♦		N	Own	3	Own	HyF	H	** –4.57	Own	O4IH	183	272	Co	2I	48¼	5¾x2⅛x☆☆	C
15	† Fwd. Control FT	1035	125	....	♦7000	2675	158	7.00/178	O-Thrift Mas.	6–3 ½x3 ¾	216	6.5	172	90–3300	4– ♦ ♦		N	Own	3	Own	HyF	H	** –5.14	Own	O4IH	202	302	Co	2I	....	5¾x2⅛x☆☆	C
16	FS	1025	137	....	8800	▼3170	7.00/178	7.00/18	O-Thrift Mas.	6–3 ½x3 ¾	216	6.5	174	90–3300	4– ♦ ♦		N	Own	3	Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I	60	7x2¾x☆	C
17	† Fwd. Control FU	1125	137	....	10000	2880	7.00/178	7.00/18	O-Thrift Mas.	6–3 ½x3 ¾	216	6.5	172	90–3300	4– ♦ ♦		N	Own	3	Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I	....	7x2¾x☆	C
18	RJ	1100	137	....	12500	▼3520	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3 ½x3 ¾	216	6.5	174	90–3300	4– ♦ ♦		N	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60	7x2¾x☆	C
19	RK	1135	161	....	12500	▼3740	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3 ½x3 ¾	216	6.5	174	90–3300	4– ♦ ♦		N	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84	8¼x2⅞x¾x☆	C
20	(School bus) RL	1280	161	....	12000	▼4120	6.50/20D	7.00/20	O-Thrift Mas. ::	6–3 ½x3 ¾	216	6.5	174	90–3300	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	....	8¼x2⅞x¾x☆	C
21	RVS	1470	137	....	15000	▼4230	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	192	93–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60	8¼x2⅞x¾x☆	C
22	RWS	1505	161	....	15000	▼4290	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	192	93–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84	8¼x2⅞x¾x☆	C
23	(c.o.e.) RPS	●1825	110	....	15000	▼4755	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	189	90–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60½	8¼x2⅞x¾x☆	C
24	(c.o.e.) RRS	●1860	134	....	15000	▼4805	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	189	90–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84½	8¼x2⅞x¾x☆	C
25	(c.o.e.) RSS	●1895	158	....	15000	▼4900	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	189	90–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	108½	8¼x2⅞x¾x☆	C
26	(c.o.e.) RP	●1825	110	....	16000	▼4755	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	189	90–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60½	8¼x2⅞x¾x☆	C
27	(c.o.e.) RR	●1860	134	....	16000	▼4805	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	189	90–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84½	8¼x2⅞x¾x☆	C
28	(c.o.e.) RS	●1895	158	....	16000	▼4900	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	189	90–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	108½	8¼x2⅞x¾x☆	C
29	RV	1470	137	....	16000	▼4230	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	192	93–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60	8¼x2⅞x¾x☆	C
30	RW	1505	161	....	16000	▼4290	7.50/20D	9.00/20♦	O-Load Mas.	6–3☆x3 ¼	235	6.6	192	93–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84	8¼x2⅞x¾x☆	C
31	(School bus) RX	1550	199	....	15000	▼4715	7.50/20D	8.25/20	O-Load Mas.	6–3☆x3 ¼	235	6.6	192	93–3100	4– ♦ ♦		Y	Own	4	□Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	....	8¼x2⅞x☆☆	C
32	Corbitt■ 18BG		181	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4⅛	330	6.1	246	104–2800	7–2½x12		Y	Cla 205V	5	TimH100DPH	....	H	**–5.29	Tim 32502H	B4IHV	.....	.....	a	TX	.....	8x3¼x¼	T
33	22BG		190	....	22000	.....	10.00/20	10.00/22	Con B6371	6–4½x4⅝	371	6.0	280	100–2600	7–2⅝x13½		Y	Fu 5A43	5	Tim L100DPH	....	H	**–5.29	Tim 35000H	B4IHV	.....	.....	a	TX	.....	8x3¼x¼	T
34	25BG		200	....	25000	.....	10.00/22	11.00/22	Con B6427	6–4☆x4⅞	427	5.9	325	127–2600	7–2⅝x13½		Y	Fu 5A43	5	Tim Q100P	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8¼x3¼x☆☆	T
35	(T) 18TG		137	....	18000	.....	10.00/20	10.00/20	Con M6330	6–4x4⅛	330	6.1	246	104–2800	7–2½x12		Y	Cla 205V	5	Tim H100P‡‡	....	H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7¼x3¼x☆☆	T
36	(T) H18TG		137	....	20000	.....	10.00/20		Con M6330	6–4x4⅛	330	6.1	246	104–2800	7–2½x12		Y	Cla 205V	5	Tim L100P‡‡	....	H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7¼x3¼x☆☆	T
37	(T) 22TG		144	....	22000	.....	10.00/20	10.00/22	Con B6427	6–4☆x4⅞	427	5.9	325	127–2600	7–2⅝x13½		Y	Fu 5A43	5	Tim L100P‡‡	....	H	**–5.29	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3¼x¼	T
38	(T) H22TG		144	....	24000	.....	10.00/22		Con B6427	6–4☆x4⅞	427	5.9	325	127–2600	7–2⅝x13½		Y	Fu 5A43	5	Tim Q100P‡‡	....	H	**–5.29	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8x3¼x¼	T
39	(T) 25TG		148	....	25000	.....	10.00/22	11.00/22	Con R6513	6–4⅞x5⅛	513	5.9	400	170–2600	7–3¼x—		Y	Spi 6253	5	Tim Q100P‡‡	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8¼x3¼x☆☆	T
40	(T) H25TG		148	....	25000	.....	10.00/22		Con R6513	6–4⅞x5⅛	513	5.9	400	170–2600	7–3¼x—		Y	Spi 6253	5	Tim R100P‡‡	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8¼x3¼x☆☆	T
41	(T) 28TG		147	....	28000	.....	10.00/22	11.00/24	Con R6602	6–4⅞x5⅛	602	5.9	484	199–2600	7–3¼x—		Y	Fu 5A650	5	Tim S200P‡‡	....	H	**–6.42	Tim 26450TW	Ws4IA	.....	.....	a	2D	.....	8¼x3¼x☆☆	T
42	(D) (T) 22TD		144	....	22000	.....	10.00/20	10.00/22	Her DWXD	6–4¼x4⅜	404	15	320	135–2600			Y	Fu 5A430	5	Tim L300P	....	H	6.32–8.20	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3¼x¼	T
43	(D) (T) H22TD		144	....	22000	.....	10.00/22		Her DWXD	6–4¼x4⅜	404	15	320	135–2600			Y	Fu 5A430	5	Tim Q300P	....	H	6.53–8.53	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8x3¼x¼	T
44	(D) (T) 25TD		148	....	25000	.....	11.00/20	11.00/22	Her DRXC	6–4⅝x5¼	529	14	400	148–2200	7–3½x13¾		Y	Spi 6253	5	Tim Q300P	....	H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8¼x3¼x☆☆	T
45	(D) (T) H25TD		148	....	25000	.....	10.00/22		Her DRXC	6–4⅝x5¼	529	14	400	148–2200	7–3½x13¾		Y	Spi 6253	5	Tim R300P	....	H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8¼x3¼x☆☆	T
46	(D) (T) 27TD		152	....	27000	.....	10.00/22	11.00/24	Cum HB600	6–4⅞x6	672	17	500	150–1800	7–4½x16½		Y	Fu 5A920	5	Tim R300P	....	H	4.92–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8¼x3¼x☆☆	T
47	(D) (T) H27TD		152	....	27000	.....	10.00/22		Cum HB600	6–4⅞x6	672	17	500	150–1800	7–4½x16½		Y	Fu 5A920	5	Tim S200P‡‡	....	H	**–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8¼x3¼x☆☆	T
48	(D) (T) 28TD		155	....	28000	.....	10.00/22	11.00/24	Cum NHB600	6–5½x6	743	15	575	200–2100	7–4½x16½		Y	Fu 5A920	5	Tim S200P‡‡	....	H	6.42	Tim 26450W	Ws4IA	.....	.....	a	2D	.....	8¼x3¼x☆☆	T
49	(T) 26TG		148	....	26000	.....	10.00/22	11.00/22	Con R660	6–4⅞x5⅝	602	5.9	484	199–2600	7–3¼x—		Y	Fu 5A65	5	Tim R100P‡‡	....	H	** –5.29	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8¼x3¼x☆☆	T
50	Crosley B		80	....	1223°°	.....	4.50/12	.....	Own	4–2½x2¼	44	7.8	33	26–5400	5–‡		..	WG-ASI-T92	3	Spi	2F	..	** –5.17	Own	Own M	64	72	C	2	.....	.....	C
51	Dodge B-1-B		108	108	4850	.....	6.00/168	6.50/168	Own T-142	6–3¼x4⅜	217	6.6	172	95–3600	4–2½x4 .8		N	NP-88670	3	Own T-142	H‡	H	4.1 –4.78	Own T-142	O4IH	175	264	Co	TX	43	☆x2☆x6☆☆	C
52	B-1-C		116	116	5500	.....	TA-15-S	TA-15-S	Own T-144	6–3¼x4⅜	217	6.6	172	95–3600	4–2½x4 .8		N	NP-88670	3	Own T-144	H‡	H	4.1 –4.78	Own T-144	O4IH	184	276	Co	TX	48	☆x2☆x6☆☆	C
53	B-1-D		116	126	7500	.....	6.00/168§	6.00/208	Own T-146	6–3¼x4⅜	230	6.7	184	102–3600	4–2½x4 .8		N	NP-39980	3	Own T-146	HyF	H	3.9 –4.89	Own T-146	O4IH	212	316	Co	TX	48	☆x2☆x6☆☆	C
54	B-1-FL		128	152	9500	.....	6.00/208‡	6.50/20	Own T-148	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-39760	4	Own T-148	HyF	H	5.6 –6 .8	Own T-148	O4IH	336	479	Cc	TX	60	21x2¾x7	C
55	B-1-F		128	192	14500	.....	6.00/208‡	8.25/20	Own T-148	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-39760	4	Own T-148	HyF	H	5.6 –6 .8	Own T-148	O4IH	336	479	Cc	TX	60	21x2¾x7	C
56	B-1-FA		128	192	14500	.....	6.50/20D	8.25/20	Own T-148	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-39760	4	Eat A5-1350	SFd	H	5.83–8.11	Own T-148	O4IH	336	479	Cc	TX	60	21x2¾x7	C
57	B-1-H		128	192	15500	.....	7.00/20♣	8.25/20	Own TX-148	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-39760	4	Own TX-148	HyF	H	5.6 –6 .8	Own TX-148	O4IHV	336	479	Cc	TX	60	21x2¾x7	C
58	B-1-HA		128	192	15500	.....	7.00/20♣	8.25/20	Own TX-148	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-39760	4	Eat A5-1350	SFd	H	5.8 –8 .11	Own TX-148	O4IHV	336	479	Cc	TX	60	21x2¾x7	C
59	(c.o.e.) B-1-FM		107	161	14750	.....	6.00/208‡	8.25/20	Own T-152	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-88070	4	Own T-152	HyF	H	5.6 –6 .8	Own T-152	O4IH	336	479	Cc	TX	60	21x2¾x7	C
60	(c.o.e.) B-1-FMA		107	161	14750	.....	6.50/20D	8.25/20	Own T-152	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-88070	4	Eat A5-1350	SFd	H	5.8 –8 .11	Own T-152	O4IH	336	479	Cc	TX	60	21x2¾x7	C
61	(c.o.e.) B-1-HM		107	161	15750	.....	7.00/20♣	8.25/20	Own T-152	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-88070	4	Own T-152	HyF	H	5.6 –6 .8	Own TX-152	O4IHV	336	479	Cc	TX	60	21x2¾x7	C
62	(c.o.e.) B-1-HMA		107	161	15750	.....	7.00/20♣	8.25/20	Own T-152	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-88070	4	Eat A5-1350	SFd	H	5.8 –8 .11	Own TX-152	O4IHV	336	479	Cc	TX	60	21x2¾x7	C
63	B-1-HH		128	192	15500	.....	7.00/20♣	8.25/20	Own T-150	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-39760	4	Own TX-148	HyF	H	5.6 –6 .8	Own TX-148	O4IHV	336	479	Cc	TX	60	21x2¾x7	C
64	B-1-HHA		128	192	15500	.....	7.00/20♣	8.25/20	Own T-150	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-39760	4	Eat A5-1350	SFd	H	5.8 –8 .11	Own TX-148	O4IHV	336	479	Cc	TX	60	21x2¾x7	C
65	(c.o.e.) B-1-HHM		107	161	15750	.....	7.00/20♣	8.25/20	Own T-154	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-88070	4	Own TX-152	HyF	H	5.6 –6 .8	Own TX-152	O4IHV	336	479	Cc	TX	60	21x2¾x7	C
66	" B-1-HHMA		107	161	15750	.....	7.00/20♣	8.25/20	Own T-154	6–3☆x4¼	236	6.6	192	109–3600	4–2⅛x5 .054		N	NP-88070	4	Eat A5-1350	SFd	H	5.8 –8 .11	Own TX-152	O4IHV	336	479	Cc	TX	60	21x2¾x7	C
67	B-1-JL		128	212	16500	.....	6.00/20D	8.25/20	Own T-150	6–3☆x4½	250	6.6	204	114–3600	4–2⅛x5 .054		Y	NP-88400	5	Own T-150	HyF	H	6.2 –7.16	Own T-150	O4IHV	396	553	e	TX	60	☆x2⅛x8☆☆	C
68	B-1-JAL		128	212	16500	.....	6.00/20D	8.25/20	Own T-150	6–3☆x4½	250	6.6	204	114–3600	4–2⅛x5 .054		Y	NP-88400	5	Eat A5-1350	SFd	H	5.8 –8 .11	Own T-150	O4IHV	396	553	e	TX	60	☆x2⅛x8☆☆	C
69	B-1-KAL		128	212	17000	.....	7.50/20♣	9.00/20	Own TX-150	6–3☆x4½	250	6.6	204	114–3600	4–2⅛x5 .054		Y	NP-88400	5	Eat 16500	SFd	H	6.14–8.54	Own TX-150	O4IHV	396	553	e	TX	60	☆x2⅛x8☆☆	C
70	(c.o.e.) B-1-JML		107	161	16750	.....	6.00/20D	8.25/20	Own T-154	6–3☆x4½	250	6.6	204	114–3600	4–2⅛x5 .054		Y	NP-88410	5	Own T-154	HyF	H	6.2 –7.16	Own T-154	O4IHV	395	553	e	TX	60	☆x2⅛x8☆☆	C
71	" B-1-JMAL		107	161	16750	.....	6.20/20D	8.25/20	Own T-154	6–3☆x4½	250	6.6	204	114–3600	4–2⅛x5 .054		Y	NP-88410	5	Eat A5-1350	SFd	H	5.8 –8 .11	Own T-154	O4IHV	396	553	e	TX	60	☆x2⅛x8☆☆	C
72	" B-1-KMAL		107	161	17250	.....	7.50/20♣	9.00/20	Own TX-154	6–3☆x4½	250	6.6	204	114–3600	4–2⅛x5 .054		Y	NP-88410	5	Eat 16500	SFd	H	6.14–8.54	Own TX-154	O4IHV	396	553	e	TX	60	☆x2⅛x8☆☆	C
73	B-1-J		128	212	16500	.....	6.50/20D	8.25/20	Own T-150	6–3☆x4½	250	6.6	204	114–3600	4–2⅛x5 .054		Y	NP-88400	5	Own T-150	HyF	H	6.2 –7.16	Own T-150	O4IHV	396	553	e	TX	60	☆x2⅛x8☆☆	C
74	B-1-JA		128	212	16500	.....	6.50/20D	8.25/20	Own T-150	6–3☆x4½	250	6.6	204	114–3600	4–2⅛x5 .054		Y	NP-88400	5	Eat A5-1350	SFd	H	5.8 –8 .11	Own T-150	O4IHV	396	553	e	TX	60	☆x2⅛x8☆☆	C

♦—8.25/20 front tires are required when 9.00/20 dual rears are used.
** — Pick-up truck; panel delivery 1265.

5—Chevrolet own rear axle (5.43:1) available on Models RJ-RK-RL. Chevrolet own 2-speed rear axle (6.13–8.10:1) available at extra cost on Models RVS-RWS-RP-RPS-RR-RRS-RS-RT-RU-RV-RW-RX.

‡‡—Two speed axles available.
♦—7.50/17 tire is optional for Rear or Front and Rear, with no increase in G.V.W.
‡—Front only; Rear 6.50/20S.

†—Forward control Chassis for Door-to-Door delivery bodies.
‡—Front only: Rear 6.25/20.
§—Front only; Rear 7.00/168.
▪—Diesel engine also available.

⇕—Diameter: (Average) Front, 2.6858; Front Center, 2.7168; Rear Center, 2.7478; Rear, 2.7788; Total length, 8¾.
●—Includes cab.
▪—Front only; Rear 7.00/20S.
☆—Includes fuel tank and cooling

(Turn to Page 106, please)

"No police chief alone can break that jam, Mr. Mayor —this town needs a top-notch traffic engineer!"

America must find room for more than 40 million cars and trucks—and that's no easy job!

THIS police chief is right. It takes more than *his* badge of authority to speed the flow of traffic and eliminate congestion.

What his city needs is a practical, intelligent plan—with adequately trained men to carry it out—and plenty of co-operation from the public, of course.

No mayor or city manager, and no group of public spirited citizens alone, can possibly decide by themselves how to end traffic snarls, delays and accidents.

The problem demands thoroughly professional study and diagnosis—and more and more municipalities are now beginning to recognize this.

Steps in the right direction

They've taken steps in the right direction in Milwaukee, Detroit, Denver, Seattle, Buffalo and Dallas, to name just a few places.

These cities—and numerous others—are giving their police departments the continuing help of experienced, competent, resourceful traffic engineers—men who know how to get results with a minimum of public inconvenience.

Sound planning gets results

In Detroit, the result has been to speed vehicle movement considerably—with a 50 per cent decrease in accidents!

Milwaukee has been made one of the safest cities in the country.

Any community can effect comparable improvements in its traffic set-up, if sensible, feasible programs are adopted for better use of its present streets.

What traffic conscious America needs is not more restrictions on its cars, trucks and buses, but more up-to-date methods of routing them in everybody's best interest.

New safety for pedestrians as well as vehicle occupants is usually the result of smoother traffic flow. In fact, the record shows that almost every measure which reduces street congestion also reduces accidents.

As a nation-wide observer of what competent traffic management can accomplish, Studebaker feels that there's virtually no limit to the progress that can be made.

STUDEBAKER

AMERICA'S GREAT PROGRESSIVE IN TRANSPORTATION SINCE 1852

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(Continued from Page 104)

Line Number	•MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear) Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
	Dodge Cont'd																														
1	.....B-1-KA	.....	128	212	17000	.....	7.50/20^	9.00/20	Own TX-150	6-3 1/16 x4 1/2	250	6.6	204	114-3600	4-2 1/16 x5 .054	Y	NP-88400	5	Eat 16500	SFd	H	6.14-8.54	Own TX-150	O4IHV	396	553 c		TX	60	9/32 x2 11/16 x8 1/2 ^	C
2	(c.o.e.) ...B-1-JM	.....	107	161	16750	.....	6.50/20D	8.25/20	Own T-154	6-3 1/16 x4 1/2	250	6.6	204	114-3600	4-2 1/16 x5 .054	Y	NP-88410	5	Own T-154	HyF	H	6.2 -7.16	Own T-154	O4IHV	396	553 c		TX	60	9/32 x2 11/16 x8 1/2 ^	C
3	(c.o.e.) B-1-JMA	.....	107	161	16750	.....	6.50/20D	8.25/20	Own T-154	6-3 1/16 x4 1/2	250	6.6	204	114-3600	4-2 1/16 x5 .054	Y	NP-88410	5	Eat A5-1350	SFd	H	5.8 -8.11	Own T-154	O4IHV	396	553 c		TX	60	9/32 x2 11/16 x8 1/2 ^	C
4	(c.o.e.) B-1-KMA	.....	107	161	17250	.....	7.50/20^	9.00/20	Own TX-154	6-3 1/16 x4 1/2	250	6.6	204	114-3600	4-2 1/16 x5 .054	Y	NP-88410	5	Eat 16500	SFd	H	6.14-8.54	Own TX-154	O4IHV	396	553 c		TX	60	9/32 x2 11/16 x8 1/2 ^	C
5	.....B-1-R	.....	130	229	18500	.....	7.50/20D	9.00/20	Own T-156	6-3 1/16 x4 1/4	281	6.4	225	115-3200	7-3x11.2	Y	NP-88220	5	Tim H100DPH	HyF	H	6.8 -7.2	Own T-156	O4IHV	396	609 c		TX	60	9/32 x2 11/16 x9 1/16	C
6	.....B-1-RA	.....	130	229	18500	.....	7.50/20D	9.00/20	Own T-156	6-3 1/16 x4 1/4	281	6.4	225	115-3200	7-3x11.2	Y	NP-88220	5	Tim H300	HFd	H	6.14-8.8	Own T-156	O4IHV	396	609 c		TX	60	9/32 x2 11/16 x9 1/16	C
7	.....B-1-T	.....	130	190	21000	.....	7.50/20^	10.00/20	Own T-158	6-3 1/16 x5	331	6.5	270	128-3000	7-3x11.2	Y	NP-88450	5	Tim L100	HyF	H	6.8 -7.4	Tim 32516A1	O4IHV	424	666 c		TX	60	1/4 x3x10	C
8	.....B-1-TA	.....	130	190	21000	.....	7.50/20^	10.00/20	Own T-158	6-3 1/16 x5	331	6.5	270	128-3000	7-3x11.2	Y	NP-88450	5	Tim L300	HFd	H	6.3 -9.18	Tim 32516A1	O4IHV	424	666 c		TX	60	1/4 x3x10	C
9	.....B-1-V	.....	130	190	23000	.....	9.00/20D†	11.00/20	Own TX-158	6-3 1/16 x5	331	6.5	270	128-3000	7-3x11.2	Y	NP-88450	5	Tim Q100	HyF	H	7.8-8.5 DR	Tim 35020nx9	O4IHV	485	770 c		TX	60	1/4 x3x10	C
10	.....B-1-VA	.....	130	190	23000	.....	9.00/20D†	11.00/20	Own TX-158	6-3 1/16 x5	331	6.5	270	128-3000	7-3x11.2	Y	NP-88450	5	Tim Q300	HFd	H	6.5 -9.5	Tim 35020nx9	O4IHV	485	770 c		TX	60	1/4 x3x10	C
11	Rte. VanB-1-DU	.....	102	117	7900	.....	7.00/16	8.25/168	Own T-164	6-3 1/16 x4 1/2	230	6.7	184	102-3600	4-2 1/16 x4.8	N	NP-88490	3	Own T-164	HyF	H	4.89-....	Own T-164	O4IH	212	316 c		TX	No	5/16 x2 1/2 x6 1/2 ^	C
12	.....B-1-EU	.....	102	142	10100	.....	7.50/16††	9.00/168	Own T-165	6-3 1/16 x4 1/2	230	6.7	184	102-3600	4-2 1/16 x4.8	N	NP-88500	4	Own T-165	HyF	H	5.83-....	Own T-165	O4IH	240	355 c		TX	No	11/32 x2 1/2 x6 1/2 ^	C
	School Buses																														
13	.....B-1-FS	.....	152	192	15000	.....	6.50/20D	7.00/20	Own T-148	6-3 1/16 x4 1/16	230	6.6	192	109-3600	4-2 1/16 x5 .054	N	NP-39760	4	Own T-148	HyF	H	5.6 -6.8	Own T-148	O4IH	336	479 Ce		TX	.....	21x2 1/4 x7	C
14	.....B-1-JS	.....	212	212	17000	.....	7.50/20D	8.25/20	Own T-150	6-3 1/16 x4 1/2	250	6.6	204	114-3600	4-2 1/16 x5 .054	Y	NP-88400	5	Own T-150	HyF	H	5.6 -6.8	Own T-150	O4IHV	396	553 c		TX	.....	1/4 x2 1/4 x8 1/2 ^	C
15	.....B-1-RS	.....	229	229	19000	.....	8.25/20D	9.00/20	Own T-156	6-3 1/4 x4 1/16	281	6.4	225	115-3200	7-3x11.2	Y	NP-88220	5	Tim H100DPH	HyF	H	6.8 -7.2	Own T-156	O4IHV	396	609 c		TX	.....	11/32 x2 11/16 x9 1/16	C
16	Duplex.....T	.....	136	220	18000	6600	8.25/20D	9.00/20	Her JXD	6-4x4 1/8	320	6.2	240	113-3000	7-2 1/16 x10 1/16	Y	Fu 5B330	5	Tim H100	B	H	•• -7.20	Tim 32502	L4IHV	420	654 A		TX	57 1/2	9/16 x3 1/2 x7 1/2 ^	C
17	.....TH-404	.....	136	220	18000	6900	8.25/20D	9.00/20	Her WXLC3	6-4 1/16 x4 3/4	404	5.8	312	139-2600	7-2 5/16 x13 1/4	Y	FU-5A430	5	Tim H-300	DF	H	6.13-8.15	Tim 32502	L41HV	420	654 A		TX	49 1/4	9/16 x3 1/2 x7 1/2 ^	C
18	.....R	.....	136	220	25000	8820	9.00/20D	10.00/20	Her WXLC-3	6-4 1/16 x4 3/4	404	5.8	312	139-2600	7-2 5/16 x13 1/4	Y	Fu 5A43	5	Tim Q300	DF	R	6.53-8.53	Tim 35100	L41HV	730	1016 A		TX	49 1/4	9/16 x3 1/2 x7 1/2 ^	C
19	.....JHA	.....	148	220	28000	9800	10.00/20D	11.00/20	Her RXB	6-4 1/16 x5 1/16	501	5.4	360	137-2400	7-3x13 1/4	Y	Fu 5A620	5	Tim S200	2F	R	•• -9.83	Tim 26450	Ws4IA	912	1311 A		TX	61 1/4	10 1/16 x3 1/2 x7 1/2 ^	C
20	.....JH-558	.....	148	220	28000	9800	10.00/20D	11.00/20	Her RXLD	6-4 1/16 x5 1/16	558	5.4	430	154-2400	7-3 1/16 x13 1/4	Y	FU-5A650	5	Tim S-300	DF	R	6.53-8.53	Tim 26450	Ws4IA	912	1311 A		TX	60 1/4	10 1/16 x3 1/2 x7 1/2 ^	C
21	.....KHA	.....	148	220	32000	10500	11.00/20D	11.00/20	Her RXC	6-4 1/16 x5 1/16	529	5.4	395	132-2300	7-3x13 1/4	Y	Fu 5A620	5	Tim U-200	2F	R	•• -9.83	Tim 26450	Ws4IA	912	1311 A		TX	60 1/4	10 1/16 x3 1/2 x7 1/2 ^	C
22	L	.....	148	220	37000	11300	11.00/20D	11.00/20	Her RXLD	6-4 1/16 x5 1/16	558	5.4	430	154-2400	7-3 1/16 x13 1/4	Y	Fu 5C650	5	Tim U-200	2F	R	•• -9.83	Tim 26450	Ws4IA	912	1311 A		TX	60 1/4	10 1/16 x3 1/2 x7 1/2 ^	C
23	Federal.....16M	.....	139	194	15500	4460	7.50/20D	7.50/20	Her JXEF	6-3 1/16 x4 1/4	245	...	184	90-3100	7-2 1/16 x10 1/16	N	WG T9	4	T 53547DPH	BF	H	•• -5.66	Tim 30000HX	L41HV	310	482 a		TX	60	8/16 x2 1/16 x3 1/4	T
24	.....16M2	.....	139	194	15500	4590	7.50/20D	8.25/20D	Her JXEF	6-3 1/16 x4 1/4	245	...	184	90-3100	7-2 1/16 x10 1/16	N	WG T9	4	Tim E300DPH	dF	H	6.13-8.10	Tim 30000HX	L41HV	310	482 a		TX	60	8/16 x2 1/16 x3 1/4	T
25	.....18M	.....	139	194	17000	4700	8.25/20D	8.25/20	Her JXBF	6-3 9/16 x4 1/4	263	...	190	96-3000	7-2 1/16 x10 1/16	N	WG T9	4	Tim E100DPH	SF	H	•• -6.20	Tim 30003H	LT4IHV	314	532 a		TX	60	8/16 x2 1/16 x3 1/4	T
26	.....18M2	.....	139	194	17000	4830	8.25/20D	8.25/20	Her JXBF	6-3 9/16 x4 1/4	263	...	190	96-3000	7-2 1/16 x10 1/16	N	WG T9	4	Tim E300DPH	dF	H	6.13-8.10	Tim 30003H	LT4IHV	314	532 a		TX	60	8/16 x2 1/16 x3 1/4	T
27	.....25M	.....	139	194	19000	4950	8.25/20D	9.00/20	Her JXCF	6-3 1/16 x4 1/4	282	...	212	102-3000	7-2 1/16 x10 1/4 ^	N	Cla 205VO	5	Tim H100DPH	SF	H	•• -6.80	Tim 3100H	LT4IHV	346	583 a		TX	60	8/16 x2 1/16 x3 1/4	T
28	.....25M2	.....	139	194	19000	5100	8.25/20D	9.00/20	Her JXCF	6-3 1/16 x4 1/4	282	...	212	102-3000	7-2 1/16 x10 1/4 ^	N	Cla 205VO	5	Tim H300DPH	dF	H	6.13-8.15	Tim 3100H	LT4IHV	346	583 a		TX	60	8/16 x2 1/16 x3 1/4	T
29	.....29M	.....	139	194	21500	5500	9.00/20D	10.00/20	Her JXDF	6-4x4 1/4	320	...	250	112-2800	7-2 1/16 x10 1/16	Y	Cla 205V	5	Tim L100DPH	SF	H	•• -6.83	Tim 32514H	LT4IHV	466	820 a		TX	60	8/16 x2 1/16 x3 1/4	T
30	.....29M2	.....	139	194	21500	5690	9.00/20D	10.00/20	Her JXDF	6-4x4 1/4	320	...	250	112-2800	7-2 1/16 x10 1/16	Y	Cla 205V	10	Tim L300DPH	dF	H	6.32-8.22	Tim 32514H	LT4IHV	466	820 a		TX	60	8/16 x2 1/16 x3 1/4	T
31	.....29MA	.....	155	194	21500	5950	9.00/20D	10.00/20	Her JXDF	6-4x4 1/4	320	...	250	112-2800	7-2 1/16 x10 1/16	Y	Cla 205V‡	15	Tim L100DPH	SF	H	•• -6.83	Tim 32514H	LT4IHV	466	820 a		TD	76	8/16 x2 1/16 x3 1/4	T
32	.....29ML	.....	139	194	21500	5535	9.00/20D	10.00/20	Here JXLDF	6-4x4 1/2	339	...	272	126-2800	7-2 1/16 x10 1/16	Y	Cla 205V	5	Tim L100DPH	SF	H	•• -6.83	Tim 32514H	LT4IHV	466	820 a		TX	60	8/16 x2 1/16 x3 1/4	T
33	.....29ML2	.....	139	194	21500	5725	9.00/20D	10.00/20	Here JXLDF	6-4x4 1/2	339	...	272	126-2800	7-2 1/16 x10 1/16	Y	Cla 205V	10	Tim L300DPH	dF	H	6.32-8.22	Tim 32514H	LT4IHV	466	820 a		TX	60	8/16 x2 1/16 x3 1/4	T
34	.....29MLA	.....	155	194	21500	5985	9.00/20D	10.00/20	Here JXLDF	6-4x4 1/2	339	...	272	126-2800	7-2 1/16 x10 1/16	Y	Cla 205V	15	Tim L100DPH	SF	H	•• -6.83	Tim 32514H	LT4IHV	466	820 a		TD	76	8/16 x2 1/16 x3 1/4	T
35	.....35M	.....	143	203	22500	6925	9.00/20D	10.00/20	Con T6371F	6-4 1/16 x4 5/16	371	...	290	133-2600	7-2 5/16 x13 1/2	Y	Cla 270VO	5	Tim L100DPH	SF	R	••-6.83	Tim 32514H	LT4IHV	466	820 a		TX	60 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
36	.....35M2	.....	143	203	22500	7115	9.00/20D	10.00/20	Con T6371F	6-4 1/16 x4 5/16	371	...	290	133-2600	7-2 5/16 x13 1/2	Y	Cla 270VO	10	Tim L300DPH	dF	R	6.32-8.22	Tim 32514H	LT4IHV	466	820 a		TX	60 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
37	.....45M	.....	143	203	26000	8005	10.00/22D	10.00/24	Con T6427F	6-4 1/8 x4 1/4	427	...	342	155-2600	7-2 1/4 x13 1/2	Y	Cla 270VO	5	Tim S100P	2F	R	•• -6.83	Tim 35011TW	TW4IA	606	933 a		TD	60 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
38	.....45M2	.....	143	203	26000	8380	10.00/22D	10.00/24	Con T6427F	6-4 1/8 x4 1/4	427	...	342	155-2600	7-2 1/4 x13 1/2	Y	Cla 270VO	10	Tim Q300P	dF	R	6.53-8.53	Tim 35011TW	TW4IA	606	933 a		TD	60 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
39	.....55M2	.....	143	203	30000	8635	11.00/22D	11.00/24	Con T6427F	6-4 1/8 x4 1/4	427	...	342	155-2600	7-2 1/4 x13 1/2	Y	Cla 270VO	10	Tim S300P	HyF	R	6.53-8.53	Tim 36021TW	Tw4IA	722	1051 a		TD	60 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
40	.....55MA	.....	155	203	30000	8765	11.00/22D	11.00/24	Con T6427F	6-4 1/8 x4 1/4	427	...	342	155-2600	7-2 1/4 x13 1/2	Y	Cla 270V‡	15	Tim S-200P	2F	R	•• -7.08	Tim 36021TW	TW4IA	722	1051 a		TD	72 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
41	.....60MA	.....	155	203	32000	9600	11.00/22D	11.00/24	Con 22RF	6-4 1/16 x5 1/16	501	...	384	148-2400	7-2 3/4 x14 1/16	Y	Fu 5A65‡	15	Tim S200P	2F	R	•• -7.08	Tim 36021TW	Tw4IA	722	1051 a		FX	72 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
42	.....60M2	.....	143	203	32000	9370	11.00/22D	11.00/24	Con 22RF	6-4 1/16 x5 1/16	501	...	384	148-2400	7-2 3/4 x14 1/16	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53-8.53	Tim 36021TW	Tw4IA	722	1051 a		TX	60 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
43	.....65M2	.....	141	201	33000	9995	11.00/22D	11.00/24	Con R6602F	6-4 7/16 x5 5/16	602	...	464	200-2600	7-3 1/4 x14 1/2	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53-8.53	Tim 36000TW	Ws4IA	722	1051 a		TX	60 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
44	.....65MA	.....	153	201	33000	10225	11.00/22D	11.00/24	Con R6602F	6-4 7/16 x5 5/16	602	...	464	200-2600	7-3 1/4 x14 1/2	Y	Fu 5A65‡	15	Tim S200P	HyF	R	•• -7.08	Tim 36000TW	Ws4IA	722	1051 a		TX	72 1/2	10 1/16 x3 1/4 x7 1/2 ^	T
	Ford F-1																														
45	Cowl....8HC-84	930	114	114	4700	2224	6.00/16-4	6.50/16-6S	Own 7HC	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 21C	3	Own 8C	H 1/2	H	3.73-4.27	Own 8RC	O4IH	178	259 Co		M2	40.06	5.92x2 1/4 x15	T
46	Cowl....8RC-84	960	114	114	4700	2264	6.00/16-4	6.50/16-6S	Own 8RC	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 21C	3	Own 8C	H 1/2	H	3.73-4.27	Own 8RC	O4IH	178	259 Co		M2	40.06	5.92x2 1/4 x15	T
	F-2																														
47	Cowl....8HD-84	1045	122	122	5700	2637	6.50/16-6	7.00/16-6S	Own 7HD	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 51Y	4	Own 8RD	SF	H	•• -4.86	Own 8RD	O4IH	167	264 Co		M2	48.06	6x2 1/4 x.19	T
48	Cowl....8RD-84	1075	122	122	5700	2677	6.50/16-6	7.00/16-6S	Own 8RD	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 51Y	4	Own 8RD	SF	H	•• -4.86	Own 8RD	O4IH	167	264 Co		M2	48.06	6x2 1/4 x.19	T
	F-3																														
49	Cowl....8HY-84	1120	122	122	6800	2847	7.00/17-6S	7.50/17-8S	Own 7HY	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 51Y	4	Own 8RY	SF	H	•• -4.86	Own 8RY	O4IH	188	308 Co		M2	48.06	6x2 1/4 x.19	T
50	Cowl....8RY-84	1150	122	122	6800	2887	7.00/17-6S	7.50/17-8S	Own 8RY	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 51Y	4	Own 8RY	SF	H	•• -4.86	Own 8RY	O4IH	188	308 Co		M2	48.06	6x2 1/4 x.19	T
	F-4																														
51	Cowl...8HTL-84	1175	134	134	10000	3328	7.00/20-8S	7.00/18-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RTL	SF	H	5.14-5.86	Own 7RTL	O4IH	302	506 Co		TX	60.06	7x2 1/4 x.21	T
52	Cowl...8RTL-84	1205	134	134	10000	3367	7.00/20-8S	7.00/18-8	Own 8RT	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RTL	SF	H	5.14-5.86	Own 7RTL	O4IH	302	506 Co		TX	60.06	7x2 1/4 x.21	T
	F-5																														
53	Cowl....8HT-84	1220	134	134	14000	3758	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RT	O4IH	302	506 Co		TX	60.06	7x2 1/4 x.21	L
54	Cowl....8RT-84	1250	134	134	14000	3798	6.50/20-6	7.50/20-8	Own 8RT	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RT	O4IH	302	506 Co		TX	60.06	7x2 1/4 x.21	L
55	Cowl...8HST-84	1250	158	158	14000	3848	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RT	O4IH	302	506 Co		TX	84.06	7x2 1/4 x.21	LT
56	Cowl...8RST-84	1280	158	158	14000	3888	6.50/20-6	7.50/20-8	Own 8RT	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RT	O4IH	302	506 Co		TX	84.06	7-2 1/4 x.21	LT
	F-5 C.O.E.																														
57	Cab...8HOW-81	1605	110	110	14000	4123	6.50/20-6	7.50/20-8	Own 7HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RW	O4IH	302	506 Co		TX	60.06	7x2 1/4 x.21	LT
58	Cab...8ROW-81	1635	110	110	14000	4163	6.50/20-6	7.50/20-8	Own 8RW	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RW	O4IH	302	506 Co		TX	60.06	7x2 1/4 x.21	LT
59	Cab....8HW-81	1635	134	134	14000	4283	6.50/20-6	7.50/20-8	Own 7HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RW	O4IH	302	506 Co		TX	84.06	7.08x2.8x1/2	LT
60	Cab....8RW-81	1665	134	134	14000	4323	6.50/20-6	7.50/20-8	Own 8RW	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RW	O4IH	302	506 Co		TX	84.06	7.08x2.8x1/2	LT
61	Cab...8HSW-81	1665	158	158	14000	4383	6.50/20-6	7.50/20-8	Own 7HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RW	O4IH	302	506 Co		TX	108.1	7.08x2.8x1/2	LT
62	Cab...8RSW-81	1695	158	158	14000	4423	6.50/20-6	7.50/20-8	Own 8RW	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RW	O4IH	302	506 Co		TX	108.1	7.08x2.8x1/2	LT
	F-5 School Bus																														
63	Bus Cl..8HST-84	1315	158	158	12000	3855	6.50/20-6	7.00/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RT	O4IH	302	506 Co		TX	128♦	7x2 1/4 x.21	LT
64	Bus Cl..8RST-84	1345	158	158	12000	3895	6.50/20-6	7.00/20-8	Own 8RT	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RT	O4IH	302	506 Co		TX	128♦	7x2 1/4 x.21	LT
65	Bus Cl..8H47-84	1530	194	194	15000	4260	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14-6.67	Own 7RTH	O4IH	302	506 Co		TX	164♦	7.08x2.8x1/2	LT
66	Bus Cl..8R4T-84	1560	194	194	15000	4300	7.50/20-8	8.25/20-10	Own 8RT	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14-5.67	Own 7RTH	O4IH	302	506 Co		TX	164♦	7.08x2.8x1/2	LT
	F-6																														
67	Cowl...8HTH-84	1610	134	134	15500	4069	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.82-8.11	Own 7RTH	O4IHV	302	506 Co		TX	60.06	7.08x2.8x1/2	LT
68	Cowl...8RTH-84	1640	134	134	15500	4109	7.50/20-8	8.25/20-10	Own 8RT	8-3 1/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RTH	O4IHV	302	506 Co		TX	60.06	7.08x2.8x1/2	LT

(Turn to Page 108, please)

† Front only: Rear 10.00/20.
†† Front only: Rear 8.25/20.
♦ Cowl to Axle.
■ For shorter wheelbases—10x3 1/2 x14.
▲ Auxiliary trans. Spicer 6281B, three forward speeds.
▲ Auxiliary trans. Spicer 703F, three forward speeds. Two speed rear axle with vacuum shift.
• —Reinforcement 6.88x2.31x.125, Inside Siderail from Front to Rear Spring Brackets.
†† —Front only: Rear 9.25/16.

design FOR LONGER MILEAGE

the new COOPER ALL-DUTY for truck-bus service

The new Cooper tire shown above actually builds a new tread for itself.

Two different designs are molded into its extra rugged, extra tough, extra thick tread—an all-duty design on top, a conventional rib underneath. The conventional rib design underneath builds up as the all-duty design on top wears slowly and evenly away—giving an extra dividend in longer mileage and greater safety.

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COOPER TIRE & RUBBER COMPANY

Factories at FINDLAY, OHIO

Cooper
ARMORED-CORD
TIRES

(Continued from Page 106)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Ford, Continued																													
	F-6, Continued																													
1	Cowl..8H8TH-84	1640	158	158	15500	4169	7.50/20-8	8.25/20-10	Own 7HT	3-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.82-8.11	Own 7RTH	O4IHV	302	506	Co	TX	84 06	7.08x2.8x¼●	LT
2	Cowl..8R8TH-84	1670	158	158	15500	4209	7.50/20-8	8.25/20-10	Own 8RT	8-3⅞x3¾	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RTH	O4IHV	302	506	Co	TX	84 06	7.08x2.8x¼●	LT
	F-6 C.O.E.																													
3	Cab..8HOWH-81	1990	110	110	16000	4569	7.50/20-8	8.25/20-10	Own 7HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	60 06	7x2¼x.21●	LT
4	Cab..8ROWH-81	2020	110	110	16000	4609	7.50/20-8	8.25/20-10	Own 8RW	8-3⅞x3¾	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T		Own 7RTM■	SF		5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	60 06	7x2¼x.21●	LT
5	Cab...8HWH-81	2020	134	134	16000	4728	7.50/20-8	8.25/20-10	Own 7HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	84 06	7.08x2.8x¼●	LT
6	Cab...8RWH-81	2050	134	134	16000	4768	7.50/20-8	8.25/20-10	Own 8RW	8-3⅞x3¾	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	84 06	7.08x2.8x¼●	LT
7	Cab..8H8WH-81	2050	158	158	16000	4828	7.50/20-8	8.25/20-10	Own 7HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	108 1	7.08x2.8x¼●	LT
8	Cab..8R8WH-81	2080	158	158	16000	4868	7.50/20-8	8.25/20-10	Own 8RW	8-3⅞x3¾	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	108 1	7.08x2.8x¼●	LT
	F-7																													
9	Cowl....8EQ-84	2685	135	135	19000	5388	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O4IHV	350	583	Co	TX	61 06	9x3x.25	T
10	Cowl...8E9Q-84	2735	159	159	19000	5498	8.25/10-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O4IHV	350	583	Co	TX	85 06	9x3x.25	T
11	Cowl...8E5Q-84	2785	195	195	19000	5618	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O4IHV	350	583	Co	TX	121 1	9x3x.25	T
	F-8																													
12	Cowl...8EQH-84	3155	135	135	21500	5659	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQH	5	Own 8QH	SF	H	**-7.17	Own 7EQ	O4IHV	485	729	C	TX	61 06	9x3x.25	T
13	Cowl..8E9QH-84	3205	159	159	21500	5769	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQH	5	Own 8QH	SF	H	**-7.17	Own 7EQ	O4IHV	485	729	C	TX	85 06	9x3x.25	T
14	Cowl..8E5QH-84	3255	195	195	21500	5889	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQH	5	Own 8QH	SF	H	**-7.17	Own 7EQ	O4IHV	485	729	C	TX	121 1	9x3x.25	T
15	Intern'l (2)...KB-1	960	113	125	4400	2250	6.00/16-4	7.00/16	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2⅛x6‡‡	N	Own HDS-B	5	Own R1050	8½		3.72-5.11	Own F50	L4IH	164	316	e	FX	38	6x2¼x¼	T
16	.....KB-1M	875	102	113	4600	2150	6.00/16-4	6.50/16-6	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2⅛x6‡‡	N	O SA-HDS-B	3	Own R1050	8½	H	3.72-5.11	Own F150	L4IH	164	316	e	FX	.....	6½x2¼x‡‡	T
17	.....KB-2	1010	125	125	5200	2285	6.00/16-4	7.00/16-6	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2⅛x6‡‡	N	Own HDS-B	3	Own R1050	8½	H	3.72-5.11	Own F50	L4IH	164	316	e	FX	50	6⅞x2¼x¼	T
18	.....KB-3	1150	130	....	6650	3000	7.00/16-6	7.50/16-6	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2⅛x6‡‡	N	Own HDS-B	3	Own R1150	8F	H	4.22-5.28	Own F150	L4IH	195	367	e	FX	55	6½x2⅛x‡‡	T
19	.....KB-3M	1050	102	113	7000	2585	7.00/16-6	7.50/16-8	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2⅛x6‡‡	N	Own H41B	3	Own R1150	8F	H	4.22-5.28	Own F150	L4IH	221	367	e	FX	.....	6½x2¼x‡‡	T
20	(a).....KB-5	1320	135	177	15000	3705	6.50/20D	8.25/20	O-GRD 233	6-3⅞x4½	233	6.3	181	93-3400	4-2⅛x6‡‡	N	Own H41B	4	Own R1360	8F	H	5.28-7.16	Own F350	LH4IH	294	509	e	FX	60	8x3x⅛	T
21	(a).....KB-6	1775	134	176	15900	4625	7.00/20D	8.25/20	Own BLD250	6-3⅞x4½	251	6.3	200	100-3200	4-2⅝x4‡‡	N	Own WT97A	4	Own R1560	8F	H	5.62-7.16	Own 16F470	LH4IHV	305	539	e	FX	60	8¼x3x⅛	T
22	(a).....KB-7	2350	134	176	18000	5055	7.50/20D	9.00/20	O-BLD 269	6-3⅞x4½	269	6.3	222	100-3000	4-2.7x4‡‡	N	Own F51	5	Own R1560	8F	H	6.50-7.16	Own F470	LH4IHV	368	633	e	FX	60	8¼x3x⅛	T
23	(a).....KB-8	3400	137	197	22000	6580	9.00/20D	10.00/24	O-RED 361	6-4½x4½	361	6.3	282	126-3000	7-3¼x10‡‡	Y	Own F51	5	Own R1572	8F	H	6.43-8.51	Own F553	LH4IHV	407	709	e	FX	60	8¼x3½x⅛	T
24	(a).....KB-10	4150	149	197	25000	7405	10.00/20D	11.00/24	Own RED401	6-4½x5	401	6.3	318	140-2800	7-3¾x10‡‡	Y	Own F52	5	Own R1676	8F	H	6.43-8.05	Own F653	LH4IHV	484	829	e	FX	72	9¼x3½x⅛	T
25	(a).....KB-11	5600	149	197	30000	8430	10.00/20D	12.00/24	O-RED 450	6-4½x5	450	6.3	361	148-2600	7-3¾x10‡‡	Y	Own F54	5	Tim R100	Hy	H	6.42-8 05	Own F750	WW4IA	746	1030	G	FX	72	10x3½x⅛	T
26	(a).....KB-12	6550	155	215	31500	9175	11.00/20	12.00/20	O-Con. R6586	6-4‡‡x5½	586	6.0	475	200-2600	7-3¼x13⅛	Y	Own F55	5	Tim R100	Hy	H	**-6.42	Own F750	BW41A	746	....	G8	FX	66	10x3½x⅛	C
27	(a).....KBR-14	7150	161	215	35000	10100	11.00/20	12.00/24	O-Con. R6586	6-4‡‡x5½	586	6.0	475	200-2600	7-3¼x13⅛	Y	Own F55B	5	Tim U200P	2F	H	**-7.08	Own F750	BW41A	746	....	G8	FX	72	10x3½x⅛	L
28	.....W-3042-L	9900	179	227	30000	12530	10.00/20	11.00/22	Cum HB600	6-5½x5½	672	17	554	254-2600	7-3¼x15¼	Y	Spl 7741	5	Tim R-100	Hy	H	**-6.42	Own 86303	BW41A	690	....	G	FX	84	10x3½x⅛	C
29	.....W-4042-OH	11250	170	230	40000	13115	10.00/20	14.00/24	Cum HB600	6-4½x6	672	17	492	150-1800	7-4½x..	Y	Spl 7741	4	Tim 79750PA	2F	H	7.69-11.36	Own 82F	BW41A	656	....	G	FX	72	10x3½x⅛	C
	School Buses																													
30	.....KB-5	1440	195	....	15000	3935	6.50/20D	8.25/20	Own GRD233	6-3⅞x4½	233	6.3	181	93-3400	4-2⅛x6‡‡	N	Own H41B	4	Own R1360	8F	H	5.28-7.16	Own F350	LH4IH	294	509	C	FX	.....	8¼x3½x⅛	T
31	.....KB-6	1900	194	212	17000	4910	7.00/20D	8.25/20	Own BLD250	6-3⅞x4½	251	6.3	200	100-3200	4-2⅝x4‡‡	N	Own WT97	5	Own R1560	8F	H	5.61-7.16	Own F470	LH4IHV	305	539	C	FX	.....	8¼x3⅞x⅛	T
32	.....KB-7	2525	212	248	19000	5770	7.50/20D	9.00/20	Own BLD269	6-3⅞x4½	269	6.3	222	100-3000	4-2.7x4‡‡	N	Own F51	5	Own R1560	8F	H	6.50-7.16	Own F470	LH4IHV	368	633	C	FX	.....	9⅛x3⅞x⅛	T
33	.....KB-8	3675	230	251	22000	6990	9.00/20D	10.00/20	Own RED361	6-4½x4½	361	6.3	282	126-3000	7-3¼x10‡‡	Y	Own F51	5	Own R1572	8F	H	6.43-8.51	Own F553	LH4IHV	407	709	C	FX	.....	10x3½x⅛	C
34	Kenworth(D)..521	.....	161	215	35000	12200	10 00/20	11.00/22	Cum HB6	6-4⅛x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	Tim U200P	DR	H	6.42-7.84	Tim 36000TW	Ws41A	752	1050	a	TD	72	9½x3¼x⅛	C
35	585	.....	150	215	30000	10130	10.00/20	11.00/22	Bu LO525	6-4½x5½	525	5.5	385	150-2200	7-3x11½	Y	Fu 5A620	5	Tim U200P	....		6.14	Tim 36000TW	Ws41A	752	....	a	....	70	9½x3¼x⅛	....
36	Linn.....L-2	.....	120	....	9000	6000	7.50/20S	8.25/20S	Her QXC3	6-3½x4½	221	...	159	77-3200	7-1¾x10⅄	N	WGT9	4	Own 600	N	N	None	Tim F30B28H	L4IH	306	478	a	T	.....	None	....
37	.....L-4	.....	156	....	9200	6200	7.50/20S	8.25/20	Her QXC3	6-3½x4½	221	...	159	77-3200	7-1¾x10⅄	N	WGT9	4	Own 600	N	N	None	Tim F30B28H	L4IH	306	478	a	X	.....	None	....
38	.....L-6	.....	169	....	12700	7700	7.50/20D	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10‡‡	N	WGT9	4	Own 600T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
39	.....L-8	.....	205	....	12900	7900	7.50/20D	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10‡‡	N	WGT9	4	Own 600T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
40	Mar. Her...DVL-4	.....	90	118	‡6750	.....	7.50/16S	8.25/18S	Willys MB	4-3½x4½	134	6.4	105	60-4000	3-2.33x5.48	Y	Own	3	(Front Drive)	.....		7.10	Own	41H	202	327	M2	.....	.....	None	....
41	Peterbilt(D)280DD	.....	175	Opt	35000	12500	10.00/20D	11.00/22	Cum HB600	6-4⅛x6	672	17.	500	150-1800	7-4½x16½	Y	Spl 8041	12	U-200P	2F	R	** -6.42	Tim 36000W	Ws4IA	738	1052	...	TD	86½	10½x3½x⅛	CT
42	Reo.....D-19XA	.....	125	125	8000	4340▲	7.00/20S	8.25/20S	Own GC 245	6-3⅛x4¼	245	6.2	192	89-3100	7-2⅝x10.7	Y	WG T97	4	Tim 53547	SF	H	5.66-6.67	Tim 30000	T41H▼	310	482	var	TX	60 5/8	8¼ x2⅜ x⅛	T
43	.....D-19A	.....	125	125	14000	4740▲	7.50/20	8.25/20	Own GC 245	6-3⅛x4¼	245	6.2	192	89-3100	7-2⅝x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8*	Tim 30000	T41VH▼	310	482	var	TX	60 5/8	8¼ x2⅜ x⅛	T
44	.....D-19T	.....	125	125	14000	5330▲	8.25/20	8.25/20	Own GC 245	6-3⅛x4¼	245	6.2	192	89-3100	7-2⅝x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13-8.10	Tim 30000	T41VH▼	310	482	var	TX	60 5/8	8¼ x2⅜ x⅛	T
45	.....D-19B	.....	150	150	14000	4900▲	7.50/20	8.25/20	Own GC 245	6-3⅛x4¼	245	6.2	192	89-3100	7-2⅝x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8*	Tim 30000	T41VH▼	310	482	var	TX	85 5/8	8¼ x2⅜ x⅛	T
46	.....D-19C	.....	165	165	14000	5090▲	7.50/20	8.25/20	Own GC 245	6-3⅛x4¼	245	6.2	192	89-3100	7-2⅝x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8*	Tim 30000	T41VH▼	310	482	var	TX	100 5/8	8¼ x2⅜ x⅛	T
47	.....D-19L	.....	187	187	14000	5080▲	8.25/20	8.25/20	Own GC 245	6-3⅛x4¼	245	6.2	192	89-3100	7-2⅝x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8*	Tim 30000	T41VH▼	310	482	var	TX	123 5/8	9x3x¼	Tf
48	.....D-21A	.....	125	125	15500	4920▲	7.50/20	8.25/20	Own GC 288	6-3⅛x5	288	6.2	225	96-3000	7-2⅝x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8*	Tim 31013	T41VH▼	310	482	var	TX	60 5/8	8¼ x2⅜ x⅛	Tf
49	.....D-21T	.....	125	125	15500	5380▲	8.25/20	8.25/20	Own GC 288	6-3⅛x5	288	6.2	225	96-3000	7-2⅝x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13-8.10	Tim 31013	T41VH▼	310	482	var	TX	60 5/8	8¼ x2⅜ x⅛	T
50	.....D-21B	.....	150	150	15500	5230▲	8.25/20	8.25/20	Own GC 288	6-3⅛x5	288	6.2	225	96-3000	7-2⅝x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8*	Tim 31013	T41VH▼	310	482	var	TX	85 5/8	9x3x¼	T
51	.....D-21C	.....	165	165	15500	5270▲	8.25/20	8.25/20	Own GC 288	6-3⅛x5	288	6.2	225	96-3000	7-2⅝x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8*	Tim 31013	T41VH▼	310	482	var	TX	100 5/8	9x3x¼	Tf
52	.....D-21R-A	.....	130	130	18000	6040▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H200-300	HFd	H	7.3*	Tim 31104	T41VH▼	344	584	var	TX	65 5/8	9x3x¼	T
53	.....D-21R-T	.....	130	130	18000	6380▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H300	HFd	H	5.95-7.3	Tim 31104	T41VH▼	344	584	var	TX	65 5/8	9x3x¼	T
54	.....D-21R-B	.....	150	150	18000	6080▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8*	Tim 31104	T41VH▼	344	584	var	TX	85 5/8	9x3x¼	T
55	.....D-21R-C	.....	165	165	18000	6180▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8*	Tim 31104	T41VH▼	344	584	var	TX	100 5/8	9x3x¼	Tf
56	.....D-21R-L	.....	185	185	18000	6430▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8*	Tim 31104	T41VH▼	344	584	var	TX	120 5/8	9 1¼x3⅛x⅛	Tf
57	.....D-22A	.....	130	130	20500	6220▲	9.00/20	9.00/20	Own GC 310H	6-3⅝x5	310	6.2	243	104-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H300	HFd	H	5.95-7.3	Tim 31104	T41VH▼	370	640	var	TX	65 5/8	9x3x¼	T
58	.....D-22T	.....	130	130	20500	6630▲	9.00/20	9.00/20	Own GC 310H	6-3⅝x5	310	6.2	243	104-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H300	HFd	H	5.95-7.3	Tim 31104	T41VH▼	370	640	var	TX	65 5/8	9x3x¼	T
59	.....D-22B	.....	150	150	20500	6140▲	9.00/20	9.00/20	Own GC 310H	6-3⅝x5	310	6.2	243	104-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H Series	HFd	H	6.16-7.3*	Tim 31104	T41VH▼	370	640	var	TX	85 5/8	9x3x¼	T
60	.....D-22C	.....	165	165	20500	6380▲	9.00/20	9.00/20	Own GC 310H	6-3⅝x5	310	6.2	243	104-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H Series	HFd	H	6.16-6.8*	Tim 31104	T41VH▼	370	640	var	TX	100 5/8	9x3x¼	Tf
61	.....D-22L	.....	185	185	20500	6430▲	9.00/20	9.00/20	Own GC 310H	6-3⅝x5	310	6.2	243	104-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8*	Tim 31104	T41VH▼	370	640	var	TX	120 5/8	9 1¼x3⅛x⅛	T
62	.....D-22R-B	.....	150	150	20500	6480▲	9.00/20	9.00/20	Own GC 310H	6-3⅝x5	310	6.2	243	104-3000	7-2⅝x10.7	Y	Cla 205V-VO	5	Tim L100-200	HF2	H	5.28-8.22	Tim 32500	T41VH▼	370	640	var	TX	85 5/8	9 1¼x3⅛x⅛	T
63	.....D-23T	.....	130	130	23000	8000▲	9.00/20	10 00/20	Con T-6427	6-4⅛x4⅞	427	6.0	335	146-2800	7-2⅝x13.6	Y	Cla 270V-VO	5	Tim L100	HFd	H	5.28-6.16*	Tim 32500	Ws41A	514	644	var	TX	65 5/8	9 1¼x3⅛x⅛	T
64	.....D-23L	.....	185	185	23000	7900▲	10.00/20	10.00/20	Con T-6427	6-4⅛x4⅞	427	6.0	335	146-2800	7-2⅝x13.6	Y	Cla 270V-VO	5	Tim L100	HF	H	5.28-6.16	Tim 32500	Ws41A	514	644	var	TX	120 5/8	9 1¼x3⅛x⅛	Tf
65	.....D-23R-T	.....	130	130	25000	8580▲	10.00/20	11.00/20	Con T-6427	6-4⅛x4⅞	427	6.0	335	146-2800	7-2⅝x13.6	Y	Cla 270V-VO	5	Tim Q100-300	HFd	H	6.16*	Tim 35011	Ws41A	638	934	var	TX	65 5/8	9 1¼x3⅛x⅛	T
66	.....D-23R-B	.....	150	150	25000	8570▲	10.00/20	11.00/20	Con T-6427	6-4⅛x4⅞	427	6.0	335	146-2800	7-2⅝x13.6	Y	Cla 270V-VO	5	Tim S200	HF2	H	7.84*	Tim 35011	Ws41A	712	1038	var	TX	85 5/8	9 1¼x3⅛x⅛	T
67	.....D-23R-BL	.....	150	150	25000	9060▲	10.00/20	11.00/20	Con T-6427	6-4⅛x4⅞	427	6.0	335	146-2800	7-2⅝x13.6	Y	270VO&c○	15	Tim S200	HF2	H	7.84*	Tim 35011	Ws41A	712	1038	var	TX	85 5/8	9 1¼x3⅛x⅛	T
68	.....D-23R-L	.....	185	185	25000	8300▲	10.00/20	11.00/20	Con T-6427	6-4⅛x4⅞	427	6.0	335	146-2800	7-2⅝x13.6	Y	Cla 270V-VO	5	Tim Q100-300	HFd	H	6.16*	Tim 35011	Ws41A	638	934	var	TX	120 5/8	9 1¼x3⅛x⅛	Tf

(Turn to Page 110, please)

▲—Includes Cab.
●—2-Speed Axle Available.
▼—Lockheed Type Front and Timken Dual Primary Rear Brakes
■—Two sp-ed rear axle with vacuum shift.
△—6231A Spicer Auxiliary Transmission.
○—Reinforcement 6.58x2.21x.125 Inside Sidersil from Front to Rear Spring Brackets.
‡—8200 for 8.25/18 tires.

Steel-Vent is the "Wet" Ring

that controls oil and can't clog

Steel-Vent is a "wet" ring. Its greater surface area helps give it greater oil carrying capacity. It delivers this extra oil freely to the cylinder walls to provide generous wall lubrication all the way up.

Steel-Vent keeps oil always under control with patented features that give it high unit pressure with lower total tension. More-than-ample drainage capacity easily handles the extra oil.

Steel-Vent can't clog. Its side-opening spacer operates against a moving segment with a "breathing" action that breaks up and flushes away clogging particles of carbon and gum.

• • •

These are three important reasons why Steel-Vent gives longer service life in any job—re-ring or rebore.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN • HASTINGS LTD., TORONTO

HASTINGS

STEEL-VENT PISTON RINGS

TOUGH *on Oil-Pumping*

GENTLE *on Cylinder Walls*

U. S. PAT. 2,148,997

(Continued from Page 108)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
	Reo, con't.																														
1	30–A		▲145	145	32000	11000▲	11.00/20	11.00/24	Con R–6513	6–4 1/2x5 1/2	513	5.9	400	173–2800	7–3 1/4x14.7	Y	Spi6252A–53▲	5	TS300–U200	HFd	H	7.08*	Tim 36000	Ws41A	722	1038	var	TI	67	10 1/2x3 1/2x 1/2	T
2	30–B		▲165	165	32000	11750▲	11.00/20	11.00/24	Con R–6513	6–4 1/2x5 1/2	513	5.9	400	173–2800	7–3 1/4x14.7	T	Spi6252A–53▲	5	TS300–U200	HFd	H	7.08*	Tim 36000	Ws41A	722	1038	var	TI	67	10 1/2x3 1/2x 1/2	T
3	31–A		▲145	145	32000	11000▲	11.00/20	11.00/24	Con R–6602	6–4 1/2x5 1/2	602	5.9	464	202–2800	7–3 1/4x14.7	Y	Spi6252A–53▲	5	TS300–U200	HFd	H	7.08*	Tim 36000	Ws41A	722	1038	var	TI	87	10 1/2x3 1/2x 1/2	T
4	31–B		▲165	165	32000	11750▲	11.00/20	11.00/24	Con R–6602	6–4 1/2x5 1/2	602	5.9	464	202–2800	7–3 1/4x14.7	T	Spi6252A–53▲	5	TS300–U200	HFd	H	7.08*	Tim 36000	Ws41A	722	1038	var	TI	87	10 1/2x3 1/2x 1/2	T
	School Buses,																														
5	C119–31		152	152			7.00/20	7.00/20	Own GC 245	6–3 1/2x4 1/4	245	6.2	192	89–3100	7–2 5/8x10.7	Y	Cla 185F	4	Tim 53547	SF	H	6.16	Tim 30000	T41VH▼	310	482	var	TX		9x3x 1/4		T
6	C119L–43		188	188			7.50/20	7.50/20	Own GC 245	6–3 1/2x4 1/4	245	6.2	192	89–3100	7–2 5/8x10.7	Y	WG T97	4	Tim 53547	SF	H	6.67	Tim31013	T41VH▼	310	482	var	TX		9 1/4x3 1/4x 1/4		T
7	C119LS–49		206	206			7.50/20	7.50/20	Own GC 245	6–3 1/2x4 1/4	245	6.2	192	89–3100	7–2 5/8x10.7	Y	Cla 231F	4	Tim E100	HyF	H	6.80	Tim31104	T41VH▼	314	532	var	TX		9 1/4x3 1/4x 1/4		T
8	C121–49		206	206			8.25/20	8.25/20	Own GC 288	6–3 1/2x5	288	6.2	225	96–3000	7–2 5/8x10.7	Y	WG T97	4	Tim E100	HyF	H	6.80	Tim31104	T41VH▼	314	532	var	TX		9 1/4x3 1/4x 1/4		T
9	C121S–55		224	224			8.25/20	8.25/20	Own GC 288	6–3 1/2x5	288	6.2	225	96–3000	7–2 5/8x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.20	Tim31104	T41VH▼	344	584	var	TX		9 1/4x3 1/4x 1/4		T
10	C122–55		224	224			9.00/20	9.00/20	Own GC 310	6–3 5/8x5	310	6.2	243	101–3000	7–2 5/8x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.2	Tim 32500	T41VH	344	588	var	TX		9 1/8x3 1/4x 1/4		T
11	C–122–L		252	252			9.00/20	9.00/20	Own GC 310	6–3 5/8x5	310	6.2	243	101–3000	7–2 5/8x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.2	Tim 32500	T41VH	344	588	var	TX		9 1/8x3 1/4x 1/4		T
12																															
13	Sterling HD97		148	175	24000	9150	9.00/20	11.00/20	Wau 6MZA	6–4 1/4x4 3/4	404	5.6	290	130–3000	7–2 5/8x12 1/2	Y	Fu 5A43	5	Tim Q100DPH	FHy	R	5.29–7.80	Tim 35011H	T41HV	524	926	A	TX	67	9x7x 1/4		A
14	HD105		148	175	24000	9550	10.00/20	11.00/22	Wau 6MZA	6–4 1/4x4 3/4	404	5.6	290	130–3000	7–2 5/8x12 1/2	Y	Fu 5A43	5	Tim R100DPH	FHy	R	5.29–7.40	Tim 35011H	T41HV	524	926	A	TX	67	9x3 1/4x 1/4		A
15	HD115		148	175	32000	10650	10.00/20	11.00/24	Wau 6SRKR	6–4 5/8x5 1/2	517	5.5	368	125–2250	7–3x13 1/4	Y	Fu 5A62	5	Tim 8200P	2F	R	6.42–9.83	Tim 36000TW	Ws41A	722	1054	A	TX	67	9 1/4x3 1/4x 1/4		A
16	HD145		148	175	36000	11250	11.00/20	12.00/24	Wau 6SRKR	6–4 5/8x5 1/2	517	5.5	368	125–2250	7–3x13 1/4	Y	Fu 5A62	5	Tim 7972 1W	2F	R	7.69–11.36	Tim 36000TW	Ws41A	722	1054	A	TX	68	9 1/4x3 1/4x 1/4		A
17	(D) HD115H		158	185	32000	11950	10.00/20	11.00/24	Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86	4	Tim 8200P	2F	R	6.42–9.83	Tim 36000TW	Ws41A	670	1118	A	TX	68	9 1/4x3 5/8x3 5/8		A
18	(D) HD145H		158	185	36000	12550	11.00/20	12.00/24	Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86	4	Tim 7972 1W	2F	R	7.69–11.36	Tim 36000TW	Ws41A	670	1118	A	TX	68	9 1/4x3 5/8x3 5/8		A
19	HC97		148	175	24000	9200	9.00/20	11.00/20	Wau 6MZA	6–4 1/4x4 3/4	404	5.6	290	130–3000	7–2 5/8x12 1/2	Y	Fu 5A43	5	Own 97H	CD	R	6.70–10.82	Tim 35011H	T41HV	518	852	A	TX	67	9x7 1/4		A
20	HC105		148	175	28000	9700	10.00/20	11.00/22	Wau 6MZA	6–4 1/4x4 3/4	404	5.6	290	130–3000	7–2 5/8x12 1/2	Y	Fu 5A43	5	Tim H100DPH	FHy	R	5.29–7.40	Tim 35011H	T41HV	524	926	A	TX	67	9x3 1/4x 1/4		A
21	HC115		148	175	32000	10350	10.00/20	11.00/24	Wau 6SRKR	6–4 5/8x5 1/2	517	5.5	368	125–2250	7–3x13 1/4	Y	Fu 5A62	5	Tim 8200P	2F	R	6.42–9.83	Tim 36000TW	Ws41A	722	1054	A	TX	67	9 1/4x3 5/8x3 5/8		A
22	HC144		148	175	36000	11250	10.00/22	12.00/24	Wau 6SRKR	6–4 5/8x5 1/2	517	5.5	368	125–2250	7–3x13 1/4	Y	Fu 5A62	5	Tim 7972 1W	2F	R	7.69–11.36	Tim 36000TW	Ws41A	670	1118	A	TX	68	9 1/4x3 5/8x3 5/8		A
23	HC147		148	175	36000	11500	10.00/22	12.00/24	Wau 6SRKR	6–4 5/8x5 1/2	517	5.5	368	125–2250	7–3x13 1/4	Y	Fu 5A62	5	Own 97H	CD	R	6.70–10.82	Tim 35011H	T41HV	518	852	A	TX	67	9x7 1/4		A
24	HC175		167	185	45000	14600	12.00/24†	14.00/24‡	Wau 145GK	6–5 1/4x6	779	6.2	585	186–2100	7–3 1/2x17 3/4	Y	Fu 4B86●	12	Own 97H	CD	R	6.70–10.82	Tim 35011H	TL41HV	540	842	A	TX	67	9x3 1/4x 1/4		A
25	HC250		178	190	60000	18400	14.00/24‡	14.00/24‡	Wau 145GK	6–5 1/4x6	779	6.2	585	186–2100	7–3 1/2x17 3/4	Y	Fu 4B86●	12	Own 137W	CD	R	6.70–10.82	Tim 36000TW	Ws41A	648	1064	A	TX	67	9x3 1/4x 1/4		A
26	(D) HC115H		167	185	32000	12250	10.00/20	11.00/24	Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86●	12	Own 137W	CD	R	6.70–10.82	Tim 36000TW	Ws41A	648	1064	A	TX	67	9x3 1/4x 1/4		A
27	(D) HC175H		167	185	45000	14930	12.00/24†	14.00/24‡	Cum HBD600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86●	12	Own 147W	CD	R	6.70–10.82	Tim 36000TW	Ws41A	708	1102	A	TX	67	9 1/4x3 5/8x3 5/8		A
28	(D) HC250H		178	190	60000	18700	14.00/24‡	14.00/24‡	Cum HBD600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86●	12	Own 147W	CD	R	6.70–10.82	Tim 36000TW	Ws41A	708	1102	A	TX	67	9 1/4x3 5/8x3 5/8		A
29	Studebaker 2R5	1022	112	112	4600	2125	6.00/16S	6.50/16S	Own 1R	6–3x4	170	6.5	134	80–4000	4–2 1/8x5 1/8	N	Own 673519	3	Own 677574	Wg41H	170	276	CO	2I	40	7x2 1/4x 1/2		T
30	2R10	1088	122	122	6100	2400	6.50/16S	7.50/16S	Own 1R	6–3x4	170	6.5	134	80–4000	4–2 1/8x5 1/8	N	Own 673519	3	Own 677574	Wg41H	198	314	CO	2I	50	7 1/8x2 1/8x 1/8		T
31	2R15–21	1236	121	121	7800	3005	7.00/17S	7.00/20	Own 2R	6–3x4	170	6.5	134	80–4000	4–2 1/8x5 1/8	N	Own 676044	4	Own 677768	SF	H	5.83–6.66	Own 677091	LH41H	216	342	Ce	TX	50 1/8	8x2 1/8x 1/8		T
32	2R15–31	1255	131	131	10000	3065	7.00/17S	7.00/20	Own 2R	6–3x4	170	6.5	134	80–4000	4–2 1/8x5 1/8	N	Own 676044	4	Own 677768	SF	H	5.83–6.66	Own 677091	LH41H	216	342	Ce	TX	60 1/8	8 1/8x2 1/8x 1/8		T
33	2R16A	1326	131	195	14000	3695	6.50/20 D	8.25/20	Own 4R	6–3 1/8x4 3/4	245	6.5	200	100–3400	4–2 1/8x5	N	Own 678794	4	Own 677632†	SF	H	6.66–5.66	Own 677091	LH41H	280	442	Ce	TX	60 1/8	8 1/8x2 1/8x 1/8		P
34	2R17A	1627	131	195	16000	4180	7.50/20 D	8.25/20	Own 4R	6–3 1/8x4 3/4	245	6.5	200	100–3400	4–2 1/8x5	N	Own 678794	4	Own 675571†	Hy	H	6.80–	Own 674484	LH41H	350	553	Ce	TX	60 1/8	8 1/8x2 1/8x 1/8		P
35	Ward La Fr. D–1		149	220	25000▲	9500	10.00/20	11.00/20	Con T6427	6–4 1/8x4 7/8	427	5.1	340	152–2600	7–2 1/2x13 1/2	Y	Ful 5A430	5	Tim Q–100	B	R	**–6.83	Tim 35017TW	Ws4A	600	928	C	TM	68 1/4	9 1/4x3x 1/4		....
36	D–1C		149	220	29000▲	9500	11.00/20	11.00/22	Con T6427	6–4 1/8x4 7/8	427	5.1	340	152–2600	7–2 1/2x13 1/2	Y	Ful 5A430	5	Tim S–200	S2	R	**–7.08	Tim 35017TW	Ws4A	673	1031	C	TM	68 1/4	9 1/4x3x 1/4		....
37	D–2K		149	220	29000▲	10000	11.00/20	11.00/22	Wau 140GK	6–4 1/2x5 1/2	525	6.4	425	168–2400	7–2 3/4x13 3/4	Y	Ful 5C650	5	Tim S–200	S2	R	**–7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68 1/4	10x3 1/2x 1/8		....
38	D–2Z		149	220	29000▲	10000	11.00/20	11.00/22	Wau 140GZ	6–4 5/8x5 1/2	554	6.4	456	184–2400	7–3 1/4x13 3/4	Y	Ful 5C650	5	Tim S–200	S2	R	**–7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68 1/4	10x3 1/2x 1/8		....
39	D–3		149	220	29000▲	10000	11.00/20	11.00/22	Con R6572	6–4 3/4x5 3/4	572	5.9	440	189–2600	7–3 1/4x14 1/2	Y	Ful 5C650	5	Tim S–200	S2	R	**–7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68 1/4	10x3 1/2x 1/8		....
40	D–3S		149	220	29000▲	10000	11.00/20	11.00/22	Con R6602	6–4 7/8x5 3/4	602	5.9	463	198–2600	7–3 1/4x14 1/2	Y	Ful 5C650	5	Tim U–200	S2	R	**–6.42	Tim 27463	Ws4B	681	1041	C	TM	68 1/4	10x3 1/2x 1/8		....
41	D–5		149	220	35000▲	12500	11.00/22	11.00/22	Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 3/4	Y	Ful 5C650	5	Tim U–200	S2	R	**–6.42	Tim 27463	Ws4B	681	1041	C	TM	68 1/4	10x3 1/2x 1/8		....
42	Willys (Sd.Del.)463	1450*	104	104	4000	*2752	6.50/15S		Own 463	4–3 1/8x4 1/8	134	6.5	105	63–4000	3–2.33x0 48	N	WG T96	3	Spi 23–1	Hy	H	4.88–5.38	Own I Tr	B41H	133	220	a	2I		5x2 1/4x.063	TfD
43	Willys 2WD	1425*	118	118	5300	*2788	6.50/16S‡	7.00/16S	Own 2WD	4–3 1/8x4 1/8	134	6.5	105	60–4000	3–2.33x5.48	N	WG T90E	3	Tim51540NX3	S▮	H	5.38–6.17	Cla F–154	B41H	176	276	a	2I	42.28	5 1/4x2x 1/8	TD
	Four-Wheel-Drive																														
44	Corbitt 22FG		159	Opt	22000		9.00/20	10.00/20	Con B6371	6–4 1/4x4 1/8	371	6.0	280	100–2600	7–2 1/8x13 1/8	Y	Fu 5A43	5	Tim R2090H	2F	H	** –8.43	Tim F2090H	L41HV		868	a	TD	74	9x3x 1/4		DL
45	Dodge B–1–P W		126	126	8700		7.50/16–8	9.00/16–8	Own T–137	6–3 1/4x4 1/8	230	6.7	185	94–3200	4–2 1/8x4.8	Y	NP–38580	4	Own T–137	HyF	H	4.8–5.8	Own T–137	O41H	210	311	e	TX	52▮	1/8x2 1/8x6 1/8	C
46	FWD HA		132	168	17000	▲7470	8.25/20D	10.00/20	Wau BZ	6–4x4 1/4	320	5.9	237	104–3000	7–2 1/4x10 1/4	Y	Own H	5	Own H	8F	H	6.6 –9.01	Own H	L41HV	391	807	a	T4	79 1/4	9x3x 1/4		T
47	HR		132	168	20000	▲8000	9.00/20	10.00/20	Wau MZA	6–4 3/4x4 1/4	404	5.6	291	129–2800	7–2 5/8x12 1/2	Y	Own H	5	Own H	8F	H	6.6 –9.01	Own H	L41HV	391	807	a	T4	89 1/2	9x3x 1/4		TC
48	HG		154	154	20000	▲8050	9.00/20	10.00/20	Wau MZA	6–4 3/4x4 1/4	404	5.6	291	129–2800	7–2 5/8x12 1/2	Y	Own U	5	Own U	BF	H	6.7 –9.8	Own U	L41HV	512	867	a	T4	90	8 1/8x3x 1/2		CC
49	SU		150	182	28000	▲10570	11.00/20D	11.00/20	Wau 8SRKR	6–4 5/8x5 1/2	517	5.5	365	126–2400	7–3x13 1/4	Y	Own YU	5	Own YU	8F	H	** –5.7	Own YU	L41HV	640	1106	a	T4	90	10 1/8x3x 1/2		CC
50	YU		150	182	28000	11570	11.00/20D	11.00/20	Wau 140GK	6–4 1/2x5 1/2	525	6.1	425	142–2200	7–3 1/4x13 1/2	Y	Own S	5	Own ZU	8F	H	6.79–12.59	Own ZU	L41HV	584	976	a	T4	90	10 1/8x3x 1/2		CC
51	ZU		150	182	33000	12540	11.00/20D	11.00/20	Wau 140GZ	6–4 5/8x5 1/2	554	6.4	460	188–2600	7–3 1/4x13 1/2	Y	Own S	5	Own ZU	8F	H	6.79–12.59	Own ZU	Ws41A	584	976	a	T4	90	10 1/8x3x 1/2		CC
52	M7		150	180	38600	▲15500	12.00/20D	12.00/24	Wau 145GK	6–5 1/4x6	779	6.2	585	186–2000	7–3 1/2x17 3/4	Y	Own M	10	Tim 1758	2F	H	** –7.33	Wis F409	Ws41A	584	976	a	T4	90	10 1/8x3x 1/2		CC
53	(D) M7D		150	180	38600	▲15700	12.00/20D	12.00/24	Bu DC844	6–5 1/4x6	779	6.2	585	186–2000	7–3 1/2x17 3/4	Y	Own M	10	Tim 1758	2F	H	** –7.33	Wis F409	Ws41A	614	1030	a	T4	90	10 1/8x3x 1/2		CC
54	M10		150	180	44000	▲15800	11.00/24D	12.00/24	Wau 145GK	6–5 1/4x6	779	6.2	585	186–2000	7–3 1/2x17 3/4	Y	Own M	10	Tim 79721	2F	H	** –7.7	Wis F409	Ws41A	614	1030	a	T4	90	10 1/8x3x 1/2		CC
55	(D) M10D		150	180	44000	▲16400	11.00/24D	12.00/24	Bu DC844	6–5 1/4x6 1/2	844	....	605	180–1800	7–3 1/4x17	Y	Own M	10	Tim 79721	2F	H	** –7.7	Wis F409	Ws41A	614	1030	a	T4	90	10 1/8x3x 1/2		CC
56	Marmon–Herr. MH440–4		158	170	24000	▲9800	9.00/20D	10.00/20	Her WXLC3	6–4 1/4x4 1/4	404	5.4	293	118–2800	7–2 1/4x13 1/4	Y	Fu 5A430	5	Own 1121	2B	H	** –8.15	Own 122	W.... A	692	1039	e	F	72	10 1/8x3x 1/8		TT
57	MH555–4		161	173	30000	▲11550	10.00/20D	11.00/20	Her RXC	6–4 5/8x5 1/4	529	6.3	390	131–2200	7–3x13 1/4	Y	Fu 5A620	5	Own 1122	2B	H	** –6.67	Own M5	F.... H	303	563	a	F	60 1/8	7x2 3/4x 1/8		TC
58	(C) R5–4		134	134	15500	▲4847	7.50/20D	7.50/20	Ford	8–3 1/8x3 3/4	239	6.4	180	100–3800	3–2 1/2x4.71	N	Ford	4	Ford	8	H	** –6.67	Own M5	F.... H	303	563	a	F	84 1/8	7x2 3/4x 1/8		TX
59	(C) R6–4		158	158	15500	▲4977	7.50/20D	7.50/20	Ford	8–3 1/8x3 3/4	239	6.4	180	100–3800	3–2 1/2x4.71	N	Ford	4	Ford	8	H	** –6.67	Own M5	F.... H	303	563	a	F	84 1/8	7x2 3/4x 1/8		TX
60	(C) LD6P–4		114	....		▲2710	15*	15*	Ford	8–3 1/8x3 3/4	239	6.4	180	100–3800	3–2 1/2x4.71	N	Ford	4	Ford	8	T	** –4.11	Own O	F.... H	162	....	A	F	48	7x2 1/4x 1/8		TT
61	(C) LD7–4		114	....	4700	▲3500	15*	15*	Ford	8–3 1/8x3 3/4	239	6.4	180	100–3800	3–2 1/2x4.71	N	Ford	4	Ford	8	H	** –4.11	Own O	F.... H	162	....	A	F	40 1/8	5 1/8x2 1/4x 1/8		TT
62	(C) R3–4		122	....	6800	▲4100	7.50/17	7.50/17	Ford	8–3 1/8x3 3/4	239	6.4	180	100–3800	3–2 1/2x4.71	N	Ford	4	Ford	8	H	** –4.11	Own I	F.... H	186	....	A	F	48	7x2 1/4x 1/8		TT
63	(C) R4–4		134	....	10000	▲4900	7.00/20S	7.00/20	Ford	8–3 1/8x3 3/4	239	6.4	180	100–3800	3–2 1/2x4.71	N	Ford	4	Ford	8	H	** –4.86	Own I	F.... H	186	....	A	F	48	7x2 1/4x 1/8		TT
64	(C) R5–A–COE4		110	158	15500	▲5600	7.50/20D	7.50/20	Ford	8–3 1/8x3 3/4	239	6.4	180	100–3800	3–2 1/2x4.71	N	Ford	4	Ford	8	H	** –5.33	Own	F.... H	303	563	A	F	60 1/8	7.08x2.85x 1/4		TT
65	(C) Q5–4		136	....	21500	▲7200	9.00/20	10.00/20	Ford	8–3 1/2x4 1/2	337	6.4	255	145–3600	3–2 1/2x5.21	..	Ford	5	Ford	H	H	** –6.80	Own	F.... H	350	583	A	F	61	9x3x 1/4		TT
66	(C) Q6–4		160	....	21500	▲7300	9.00/20	10.00/20	Ford	8–3 1/2x4 1/2	337	6.4	255	145–3600	3–2 1/2x5.21	..	Ford	5	Ford	H	H	** –6.80	Own	F.... H	350	583	A	F	85	9x3x 1/4		TT
67	Q7–4		196	....	21500	▲7500	9.00/20	10.00/20	Ford	8–3 1/2x4 1/2	337	6.4	255	145–3600	3–2 1/2x5.21	..	Ford	5	Ford	H	H	** –6.80	Own	F.... H	350	583	A	F	85	9x3x 1/4		TT
68	Oshkosh W–312		149	205	25000	▲10200	10.00/20D	11.00/20	Her WXLC03	6–4 1/4x4 1/4	404	6.3	312	139–2600	7–2 5/8x13 3/4	Y	Fu 5A43	10	Own W312	8F	H	** –8.8	Own W312	L41I	510	876	G	TX	82	8 1/4x2x 1/4	TF	
69	W170D		150	205	28000	▲11000	11.00/20D	12.00/20S	Her RXC	6–4 5/8x5 1/4	529	6.4	395	131–2200	7–3x13 1/4	Y	Fu 5A620	5	Own W1700	8F	H	** –8.4	Own 1700	L41H	570	980	G	TX	82	8 1/4x2x 1/4	TF	

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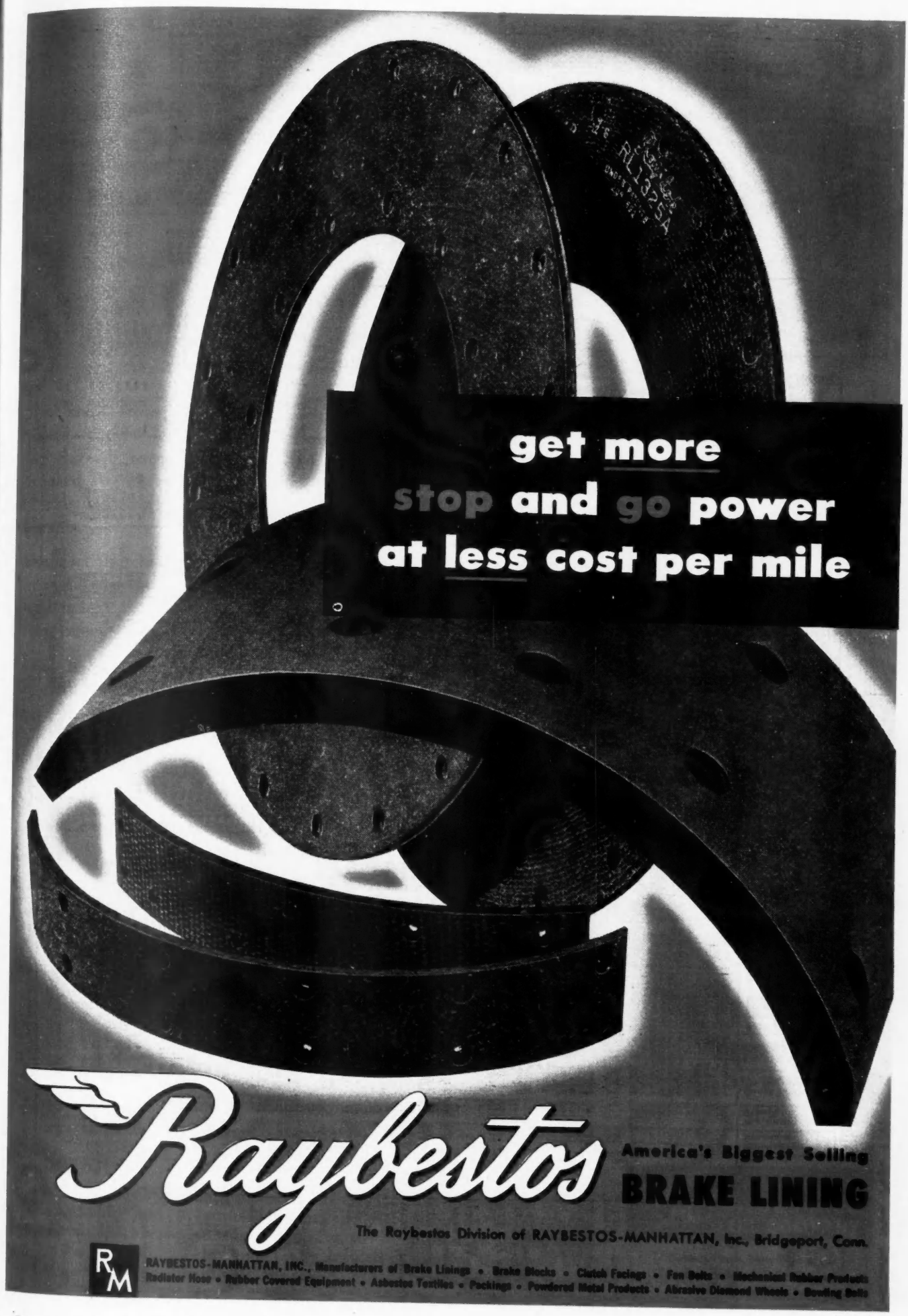
† Rear only; Front 11.00/24. ‡ Rear only; Front 12.00/24. ▲ Includes Cab. ● Auxiliary transmission Own F7. ▮ Rear only; Front 6.00/16. ◆ 2 speed 6.13–8.19 optional. ▼ Complete Vehicle with pick-up type body. ▼—Lockheed type front and Timken dual primary rear brakes. ▲ Auxiliary Transmission Own 6J. ▲ 8031 F–O Spicer Transmission available. ▲ Special W.B.'s available on request.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(Continued from Page 110)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	REAR AXLE Forward Speeds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	Oshkosh, con't.																														
1	W-700		150	205	30000	▲12000	11.00/20D	12.00/20	Her RXCO	6-4⅝x5¼	529	5.4	395	131-2200	7-3x12¾	Y	Fu 5A650	10	Own W700	2F	H	** -6.8	Own W700	L4IH	630	975G	TX	82	10½x3x⅝	TF
2	(D) W-703D		150	205	30000	▲12700	11.00/20D	12.00/20	Her DRXC	6-4⅝x5¼	629	15.	398	147-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	** -6.8	Own W700	L4IHA	630	975G	TX	82	10½x3x⅝	TF
3	W-703		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6-4⅝x5¼	558	5.4	430	150-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	** -6.8	Own W700	L4IH	630	975G	TX	82	10½x3x⅝	TF
4	W-705		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6-4⅝x5¼	558	5.4	430	150-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	** -6.8	Own W700	L4IH	630	975G	TX	82	10½x3x⅝	TF
5	(D) W-906		158	181	38000	▲15600	12.00/20D	14.00/208	Cum HB600	6-4½x6	672	...	500	150-1800	7-4½x16	Y	Fu 4A86	12	Own W906	2F	H	** -6.2	Own W906	LT4IWS	645	975G	TX	90	10½x3½x½	TF
6	W2200		160	181	40000	▲16500	13.00/20D	14.00/208	Bu MO779	6-5½x6	779	...	575	188-2100	7-3¾x17	Y	Fu 4A86	12	Own W2200	2F	H	** -6.15	Own 2200	LT4IA	645	975G	TX	90	10½x3¾x½	LF
7	W2201		160	181	40000	▲16500	13.00/20D	14.00/208	Bu MO893	6-5½x6	893	...	679	200-1800	7-3¾x17	Y	Fu 4A86	12	Own W2201	2F	H	** -6.15	Own 2201	LT4IA	645	975G	TX	90	10½x3¾x½	TF
8	(D) W2204		160	181	40000	▲18500	13.00/20D	14.00/24	Bu 6IDC844	6-5¾x6 ½	844	...	605	180-1800	7-3¾x17	Y	Fu 4A86	12	Own W2204	2F	H	** -6.4	Own 2204	LT4IA	780	1190G	TX	90	10½x3¾x½	TF
9	W2205		160	181	54000	▲19500	13.00/20D	14.00/24	Bu 6IDC8844	6-5¾x6 ½	844	...	740	240-2100	7-3¾x17	Y	Fu5A920	10	Own W2205	2F	H	** -6.3	Own W2205	LT4IA	780	1190G	TX	90	10½x3¾x½	LF
10	W2206		160	181	54000	▲19000	13.00/24D	14.00/24	H8 400	6-5¾x7	●	5.7	930	295-2000	7-3¾x14 ½	Y	Fu5A1120	10	Own W2206	2F	H	** -6.3	Own W2206	LT4IA	780	1190G	TX	90	10½x3¾x½	LF
11	W2208		160	181	46000	17700	13.00/20D	14.00/24	Cum NH600	6-5½x6	743	...	535	200-2100	7-4½x16½	Y	Fu 4A86	12	Own W2208	2F	H	** -6.4	Own W2208	LT4IA	780	1190G	TX	90	10½x3½x½	TF
12	Sterling DD115		160	178	32000	11500	10.00/20	11.00/24	Wau 6SRKR	6-4⅛x5½	517	5.5	368	125-2250	7-3x13⅜	Y	Fu 5A620	10	Tim 1357W	2F	H	6.52-8.6	Tim F2110W	Ws4IA	644	984A	TX	76	9x3¼x¼	A
13	(D) DD145H		167	185	36000	13000	11.00/20	12.00/24	Cum HB600	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 4B86	10	Tim 1758W	2F	H	7.33-10.3	Tim F409CW	Ws4IA	644	984A	TX	77	9¼x3¼x½	A
14	Walter(e.f.) FN		126	150	20000	7500	9.00/20D	10.00/208	Wau MZA	6-4¼x4¾	404	5.6	290	125-2600	7-2¾x12½	Y	Own FN	6	Own FNB	2	H	6.0-8.0	Own FN	O4IA	470	670G		84	7x2¾x¼	C
15	(e.f.) FZM		126	150	24000	8500	10.00/20D	12.00/208	Wau MZA	6-4¼x4¾	404	5.6	290	125-2600	7-2¾x12½	Y	Own FN	6	Own FMB	2	H	6.0-8.0	Own FJ	O4IA	470	670G	I	84	12x3½x½	B
16	(e.f.) FCK		126	138	30000	10500	10.00/24D	11.00/248	Wau 8RKR	6-4⅝x5¼	517	5.5	365	125-2200	7-3x13⅜	Y	Own FC	6	Own FCB	2	H	7.5-9.0	Own FC	O4IA	585	890D	FI	84	13x3¼x½	B
17	(e.f.) FC		138	162	32000	11000	11.00/24D	12.00/248	Wau 8RKR	6-4⅝x5¼	517	5.5	365	125-2200	7-3x13⅜	Y	Own FC	6	Own FCB	2	H	7.5-9.0	Own FCR	O4IA	585	890D	FI	96	14x3¼x½	B
18	(e.f.) FGB		126	162	32000	12000	11.00/24D	12.00/248	Wau 145GK	6-5¼x6	779	5.7	580	185-2000	7-3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5-9.0	Own FCR	O4IA	585	890D	FI	84	14x3¼x½	B
19	(e.f.) FGR		126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6-5¼x6	779	5.7	580	185-2000	7-3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5-9.0	Own FCR	O4IA	585	890D	FI	89	14x3¼x½	B
20	Ward La Fr. FD1				35000	▲11500	11.00/22	11.00/22	Cont 6513	6-4½x5¾	513	5.9	405	180-2800			Ful 5A620	5	Tim R462W			** -8.15	Tim F3160W	BW4IA			Co			10x3x⅞	
21	(D) FD2				35000	▲12000	11.00/24	11.00/24	Cum HB600	6-5½x6	672	17.	500	150-1800			Ful 5A920	5	Tim R462W			** -8.15	Tim F3160W	BW4IA			Co			10x3x⅞	
22	Willys Jp. CJ-2A	1220*	80	80	3500	•2169	6.00/16	7.00/15	Own CJ-2A	4-3⅛x4⅝	134	6.5	105	60-4000	3-2.33x5.48	N	WG T90C	6	Spi 41-2	Hy	H	** -5.38	Spi 25	B4IH	118	198a		F		4x1¾x⅞	P
23	4WD	1725*	118	118	5300	•2920	7.00/16		Own 4WD	4-3⅛x4⅝	134	6.5	105	60-4000	3-2.33x5.48	Y	WGT90A	6	Tmi 5540NX3	8½	H	** -5.38	Spi 25	B4IH	176	276a		2I	42.28	5½x2x⅞	TD
	Six-Wheelers Wheels ▼ Driven																														
24	Dodge		154	190	34000		9.00/20	10.00/20	Own T159	6-3⅝x5	331	6.5	270	128-3000	7-3x11.2	Y	NP 88450	5	Tim SBD1555	HyF		6.8-7.2	T-35020NX9	O6IA	727	1056C	TX	84	10x3x⅛	CP
25	Duplex TH6		162	220	30000	9180	8.25/20	9.00/20	Her JXD	6-4x4½	320	6.2	240	113-3000	7-2½x10⅜	Y	Fu 5B33▵	10	Tim SBD1055	BF	L	**-6.16	Tim 32502H	L6IHV	513	839A	TX	83⅛	9½x3½x¼	L
26	(D) L6		172	208	45000	15000	11.00/20	12.00/20	Cum HB600	6-4⅞x6	672	17.	495	150-1800	7-4½x16½	Y	Fu 5A920	5	Tim SD454	SF2	L	6.8-8.15	Tim 26450	Ws6IA	1137	1625A	TX	77⅜	10½x3½x	L
27	Federal 663MA		189	225		14500	10.00/20	10.00/22	Con R6602	6-4⅞x5¾	602	...	464	200-2600	7-3¼x14½	Y	Fu 5A65▼	15	T SW3012P	WF	R	** -6.16	Tim 36000TW	Ws6IA	1082	1569a		TD	108	10½x3½x	T
28	664MAB		189	225		15850	11.00/22	12.00/20	Con R6602	6-4⅞x5¾	602	...	464	200-2600	7-3¼x14½	Y	Spi 7741▼	12	Tim SW456P	WF	R	** -7.6	Tim 27452W	Ws6IA	1308	1888a		TD	108	10½x3½x	T
29	664MA		189	225		1o950	11.00/22	12.00/20	Con R6602	6-4⅞x5¾	602	...	464	200-2600	7-3¼x14½	Y	Spi 7741▼	12	Tim SD462P	BR	R	** -8.15	Tim 27452W	Ws6IA	1092	1624a		TD	108	10½x3½x	T
30	629M		163	199		8600	8.25/20	9.00/20	Her JXDF	6-4x4¼	320	...	250	112-2800	7-2½x10½	Y	Cla 205V‡‡	10	T8BD1055dph	8F	R	7.53	10.35	Tim 32514H	LT61HV	544	914a		TX	84	9½x3½x¼	TL
31	629ML		163	199		8635	8.25/20	9.00/20	Her JXLDF	6-4x4½	339	...	272	126-2800	7-2½x10½	Y	Cla 205V‡‡	10	T8BD1055dph	8F	R	7.53	10.35	Tim 32514H	LT61HV	544	914a		TX	84	9½x3½x¼	T
32	635M		167	203		10400	9.00/20	9.00/20	Con T6371F	6-4¾x4⅝	371	...	290	133-2600	7-2¾x13½	Y	Cla 270VO▵	12	T8BD1555dph	8F	R	8.33	11.47	Tim 35011H	LT61HV	752	1132a		TX	84	11½x3½x¼	T
33	645M		167	215		12325	10.00/22	10.00/22	Con T6427F	6-4⅞x4¼	427	...	342	155-2600	7-2¾x13½	Y	Cla 270VO▵	5	T-8D3010P	BR	R	** -9.16	Tim 35011TW	Ws6IA	1073	1550a		TD	84½	10½x3½x	T
34	F.W.D. M6x6		Opt	Opt	58000	▲21400	11.00/24D	11.00/24	Wau 145GK	6-5¼x6	779	6.2	585	186-2000	7-3½x17¾	Y	Own M	10	Wis SD462	2F	L	** -10.6	Wis F409	Ws6IA	1080	1680a		T6	120	10⅞x3x⅜	P
35	(D) M6X6D		Opt	Opt	58000	▲21600	11.00/24D	11.00/24	Bu DC844	6-5¾x6½	844	...	605	180-1800	7-3¾x17	Y	Own M	10	Wis SD462	2F	L	** -10.6	Wis F409	Ws6IA	1080	1680a		T6	120	10⅞x3x⅜	P
36	International (2)																														
37	KB-6F 4R	3300	151	194	24000	7010	7.50/20D	8.25/20	Own BLD250	6-3⅞x4½	251	6.3	200	100-3200	4-2⅛x5⅜	N	Own F51	5	Own RF1450	SF	H	6.16-6.66	Own F470	LH61HV	495	869c		PX	77	8⅞x⅞x⅞	T
38	KB-8F 4R	4950	161	215	30000	8670	8.25/20D	9.00/20	Own RED361	6-4¼x4½	361	6.3	282	126-3000	7-3¼x10⅜	Y	Own F52	5	Own RF1560	SF	H	6.50-7.16	Own F550	LH61HV	644	1105c		PX	84	9¼x3⅞x⅞	T
39	KB-11F 4R	7425	161	215	41000	10830	9.00/20D	10.00/20	Own RED450	6-4¾x5	451	6.3	360	148-2600	7-3¼x10⅜	Y	Own F54	5	Own RF1670	SF	H	** -7.16	Own F760	LH61HV	738	1179G		PX	84	10x3⅞x¾	T
40	W4064L	12925	203	239	40000	15750	10.00/22	11.00/22	Cum HB600	6-4½x6	672	17	492	150-1800	7-4½x	Y	Spi 7741	4	Tim SW3012	WF	L	4.71-6.16	Own 82F	BW61A	876			PX	108	10x3½x⅞	C
41	W4564OH	13750	188	242	45000	16635	10.00/22	11.00/22	Cum HB600	6-4½x6	672	17	492	150-1800	7-4½x	Y	Spi 7741	4	Tim SW456	WF	H	6.00-7.6	Own 83F	BW61A	1020			PX	90	10x3½x⅞	L
42	W6564OH	15700	206	302	65000	19895	11.00/24	12.00/24	Cum HB600	6-4½x6	672	17.	492	150-1800	7-4½x	Y	Spi 7741	4	Tim SD466	2F	H	8.15-11.66	Own 82F	BW61A				PX	108	10x3½x⅞	L
	Kenworth																														
43	(D) 522		187	245	43000	12900	10.00/20	11.00/22	Cum HB6	6-4¾x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	Tim U200P4†				Tim 36000TW	Ws41A	1135					9½x3¼x⅞	
44	(D)523.4R		193	241	41000	14600	10.00/20	11.00/22	Cum HB6	6-4½x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	Ti SW3012PA	WF	R	** -6.16	Tim 36000	Ws4rIA	924	1248a		TD	102	9½x3¼x⅞	C
45	(D)524.4R		193	241	54000	15100	10.00/20	11.00/22	Cum HB6	6-4¾x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	Tim SW456	WF	R	6.0-7.6	Tim 36000	Ws4rIA	819	1192a		TD	102	9½x3¼x⅞	C
46	528.4R		186	234	40000	12500	10.00/20	10.00/22	Bud L0525	6-4½x5½	525	5.5	385	150-2200	7-3x11½	Y	Fu 5A620	5	Ti SW3012PA	WF	R	** -6.16	Tim 35100	Ws4rIA	924	1248a		TD	102	9½x3¼x⅞	C
47	(D)548.4R		193	241	54000	17000	11.00/22	12.00/24	Cum HB6	6-4¾x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	Tim SD462	DR	R	** -8.15	Tim 36000	Ws4rIA	819	1192a		TD	102	9½x3¼x⅞	dbC
48	(D)552.4R		255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6-4¾x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	Tim SD462W	WF	R	** -8.15	Tim F3200W	Ws4rIA	1109	1192a		TD	102	9½x3¼x⅞	dbC
49	(D) 825		193	241	42000	14900	10.00/20	11.00/22	Cum HB6	6-4¾x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	TGSW458P	WF		6.0-7.6	Tim 36000	Ws4rIA	1016	a		TD	102	9½x3¼x⅞	C
50	829		186	234	42000	14650	10.00/20	11.00/22	Bud LO525	6-4½x5½	525	5.5	385	150-2200	7-3x11½	Y	Fu5A620	5	TSD3010P	DR	R	-8.27	Tim 36000	Ws4rIA	924	a		TD	104	9½x3¼x⅞	
	Marmon-Herr																														
51	(C) R5-6		156		22500	▲6673	7.50/20D	7.50/20	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Timken	S	H	** -6.67	Own M5	M	503	a		F	82⅞	7½x3x¼	C
52	(C) R6-6		180		22500	▲6710	7.50/20D	7.50/20	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Timken	S	H	** -6.67	Own M5	M	503	a		F	106⅛	7½x3x¼	C
53	MH440-6		182		34000	▲10600	9.00/20	10.00/20	Her WXLC3	6-4¼x4¾	404	5.4	230	118-2800	7-2¾x13¼	Y	Fu 5A430	5	Own 1123	2B	H	** -8.43	Own 121	Ws A	876	C		F	96	9⅜x3x¼	T
54	MH-555-6		182		42000	▲14900	11.00/20	11.00/20	Her RXC	6-4¾x5¼	529	6.3	390	131-2200	7-3x13¾	Y	Fu 5A620	5	Own 1124	2B	H	** -8.15	Own 122	Ws A	1092	1608		F	93	10⅛x3x⅜	T
55	(C) R5-COE6		156	180	22500		7.50/20D	7.50/20	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	S	H	6.67	Own	F H	303	563A		F		7.08x2.8x¼	T
56	(C) Q-5-6		160		35000	▲9550	9.00/20	10.00/20	Ford	8-3½x4⅛	337	6.4	255	145-3600	3		Ford	5	Ford		H	** -6.80	Own	F H	350	583		F	85	9x3x¼	T
57	(C) Q-6-6		184		35000	▲9700	9.00/20	10.00/20	Ford	8-3½x4⅛	337	6.4	255	145-3600	3		Ford	5	Ford		H	** -6.80	Own	F H	350	583		F	109	9x3x¼	T
	Oshkosh																														
58	W703-6X6		Opt	Opt	47000	16950	11.00/20D	12.00/20	Her RXLD	6-4⅛x5¼	558	5.4	430	150-2200	7-3½x13¼	Y	Fu 5A650	12	Tim SD454W	2F	H	** -6.31	Own-Tim	L6IH	1080	1625G	TX	Opt	10½ 3½ ¼	B
59	(D) W1600BD		245	Opt	60000	22770	11.00/24D	12.00/24	Bu 6IDC844	6-5¼x6½	844	...	600	180-1800	7-3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** -6.14	Own-Tim	LT61A	1080	1625G	TX	160	12⅜-8¾-¼	B

(Turn to Page 114, please)

▼ Auxiliary transmission Spicer 7034 with 3 forward speeds.
▲ Torque divider, Timken T70-2 speed.
◆ Turbo speed transmission—2 speed transfer case.
‡‡ Overdrive optional.
■ Includes cab.
• Complete vehicle with pick-up type body.
●—1090 cu. in.
▼ Timken T77 2-speed Transfer Case.
◆—Timken T76-Two speed transfer case.
▵ Auxiliary transmission Spicer 6231B at extra cost gives 15 forward speeds.
† Timken T13126 PA Trailing Axle.

YOU know from experience how maintenance costs went *UP* last Winter . . . how the heavy going through snow and slush took its toll in increased engine wear . . . how one heavy duty unit after another went into the shop for engine overhauls.

Don't let that happen again with your fleet this Winter. Change now to a motor oil that's TOUGH enough to take all the extra punishment that Winter driving offers. *Change now to VEEDOL 90 H.D.!*

VEEDOL 90 H.D. is the naturally *TOUGH* heavy duty oil that's refined from Bradford, Pennsylvania, crude—*finest "lube" crude in the world!* That's where VEEDOL 90 H.D. gets its famous "Fighting Film of Protection" that armors fast moving parts against the ravages of pressure, heat and wear. That's why VEEDOL 90 H.D. is the *TOUGH* heavy duty oil that can cut down wear this Winter and safely prolong the period between engine overhauls.

Veedol engineers go a step further, too, and blend scientific additives into inherently stable VEEDOL 90 H.D. to help give your fleet: (1) Full-throttle operation without ring sticking; (2) Top performance without bearing corrosion; and (3) High engine speeds without lacquering of valve stems and rings.

If you want to ease up on Winter repair problems in your fleet—want to get *more profitable miles* from every unit—make your next oil VEEDOL 90 H.D.

Remember, VEEDOL 90 H.D. is made *TOUGH* to make your Winter maintenance *easier!*

VEEDOL

90 H.D. MOTOR OIL

CLEANS AS YOU DRIVE

100% Bradford, Pennsylvania, Crude

FULLY DETERGENT
Keeps engine clean by minimizing sludge and lacquer formation; keeps rings and valves free.

FULLY DISPERSIVE
Acts to keep sludge, lacquer and particles of soot in suspension, so they're actually drained off with the oil.

ANTI-CORROSIVE
The presence of the additives in the oil assures protection against corrosion for the newer alloy bearing used in heavy-duty vehicles.

VEEDOL
OILS AND GREASES

FEDERAL TIRES
"GOOD FOR A LONG SAFE RIDE"

TIDE WATER ASSOCIATED OIL COMPANY

17 Battery Place, New York 4, N.Y.
Thompson Building, Tulsa 2, Okla.
79 New Montgomery Street
San Francisco 20, Calif.

(Continued from Page 112)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	WHEEL-BASE Maximum Optional	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES Standard Front and Rear	TIRE SIZES D-dual rear S-single rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Number Diameter and Length Main Bearings	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	Oshkosh Cont'd.																																
1	(D) . . **W1600BDH		207	Opt		60000	24300□	11.00/24	D	12.00/24	Bu 6DC344	6–5½ x6½	844	. . .	600	180–1800	7–3¾ x17	YFu 4B186	12 Tim SD462	2F	H	** –9.82	Own-Tim	LT61A	1090	1625	G	TX	174	12½–3–½–B	
2	(D) . . **W1602BDH		272	Opt		95000	29700□	14.00/24	D	14.00/24	Bu MO893	6–5¾ x6	893	. . .	625	200–1900	7–3¾ x17	YFu 4B186	12 Tim SD462	2F	H	** –13.9	Own-Tim	LT61A	. . .	2217	G	TX	177	12½–3–½–B	
3	. . . . W1600BG		245	Opt		60000	24400□	11.00/24	D	12.00/24	Cum 6HBI	6–4½ x6	672	. . .	500	150–1800	7–4½ x16	YFu 4B186	12 Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1090	1625	G	TX	174	12½–3–½–B	
4	(D) . . **W1600CD		259	Opt		60000	23700□	11.00/24	D	12.00/24	Cum 6HBIS	6–4½ x6	672	. . .	635	200–1900	7–4½ x16	YFu 4B186	12 Tim SD462	2F	H	** –9.82	Own-Tim	LT61A	1090	1625	G	TX	174	12½–3–½–B	
5	(D) . . **W1600CDS		285	Opt		60000	24000□	11.00/24	D	12.00/24	Cum 6HBI	6–4½ x6	672	. . .	500	150–1800	7–4½ x16	YFu 4B186	12 Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1090	1625	G	TX	174	12½–3–½–B	
6	(D) . . **W1600CDH		267	Opt		60000	24300□	11.00/24	D	12.00/24	Cum 6HBIS	6–4½ x6	672	. . .	635	200–1900	7–4½ x16	YFu 4B186	12 Tim SD462	2F	H	** –9.82	Own-Tim	LT61A	1090	1625	G	TX	174	12½–3–½–B	
7	(D) . . **W1600CDSH		267	Opt		60000	24300□	11.00/24	D	12.00/24	Cum 6HBIS	6–4½ x6	672	. . .	635	200–1900	7–4½ x16	YFu 4B186	12 Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1090	1625	G	TX	174	12½–3–½–B	
8	Peterbilt (D) . . . 350		193	Opt		42000	. . . . .	10.00/20	D	11.00/22	Cum HB600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YSpl 4B186	12 Tim 6W3012W	WF	R	6.00– 8.5	T 36000W	W961A	1125	1569	. . .	TD	99½	9 ½x3½x¼	CT
9	(D) 360		198	Opt		54000	. . . . .	10.00/20	D	11.00/22	Cum HB600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YSpl 4B186	12 Tim 8W456W	WF	R	6.00– 10.2	T 36000W	W961A	1005	1517	. . .	TD	104½	10 ½x3½x¼	CT
10	(D) 370		198	Opt		58000	. . . . .	10.00/20	D	11.00/22	Cum HB600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YSpl 4B186	12 Tim 8W462W	WF	R	6.00– 8.15	T 27463	W961A	1084	1626	. . .	TD	104½	10 ½x3½x¼	CT
11	(D) 380		194	Opt		60000	. . . . .	10.00/20	D	11.00/22	Cum HB600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YSpl 4B186	12 Tim 8W462W	2F	R	** –8.15	T 27463	W961A	1084	1626	. . .	TD	98½	10 ½x3½x¼	CT
12	(D) 390		197	Opt		79000	. . . . .	10.00/20	D	11.00/22	Cum HB600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YSpl 4B186	12 Tim 8D462W	2F	R	** –8.15	T 27463	W961A	1622	2215	. . .	TD	103½	10 ½x3½x¼	CT
13	Reo . . . D–230, 4R		169	200		47000	13060▲	10.00/20		10.00/20	Con T–6427	6–4 x4¾	427	6	236	153–2800	7–3 x13.6	YCla270V-VOP	15 Tim 8D3010	SF2	T 7.5		Tim 36000	W941A	1082	1570	var	TD	104	9 ½x3 ½x¼	TFP
14	. . . . D–310, 4R		186	248		56000	16000▲	10.00/20		10.00/20	Con R–6602	6–4½ x5½	602	5.9	464	203–2800	7–3 x14.7	YSpl62524A-53	15 Tim 8D454	SF2	T 7.33–8.15		Tim 36000	W941A	1230	1778	var	TD	108	10½x3 ½x½	TFP
	Sterling																																
15	. . . . HB8130		164	183		32000		11000	6.25/20		Wau 6MZA	6–4½ x4½	404	6.2	190	130–3000	7–2¾ x12½	YFu 5A43	5T–SBD15550PH	SF	L	6.80–13.14	T–35011H	T61HV	664	1134	A	TX	83	9x3 ¼x ¼	A
16	. . . . HD8140		164	183		36000		11500	9.00/20		Wau 6MZA	6–4½ x4½	404	6.2	190	130–3000	7–2¾ x12½	YFu 5A43	5T–8D3010PA	2F	L	6.84–10.22	T–35011TW	W861A	1074	1554	A	TX	83	9x3 ¼x ¼	A
17	. . . . HW8160		164	183		42000		12800	10.00/20		Wau 6BKGR	6–5¼ x5½	517	5.5	368	125–2250	7–3 x13¼	YFu 5A62	5T–8W3010PA	WF	L	5.40–8.50	T–3600TW	W861A	1082	1574	A	TX	83	9x3 ¼x ¼	A
18	. . . . HW8235		182	193		52000		15700	11.00/22		Wau 145GK	6–5¼ x6	779	6	258	186–2100	7–3½ x17¾	YFu 4B86	4T–8W456P	WF	L	5.67–8.20	T–27454W	W861A	1308	1892	A	TX	92	9 ¼x3 ½x¼	A
19	(D) . . . HW8160H		182	193		42000		14250	10.00/20		Cum HB600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YFu 4B86	4T–8W3012PA	WF	L	5.66–8.20	T–27454W	W861A	1308	1892	A	TX	92	9 ¼x3 ½x¼	A
20	(D) . . . HW8235H		182	193		52000		15300	11.00/22		Wau 140GK	6–5¼ x5½	425	6	256	142–2200	7–3¼ x13½	YFu5A62-3A92	15 Own 195W	CD	R	6.04–7.31	T–3600TW	W861A	1082	1802	A	TX	93	9 ¼x3 ½x¼	A
21	. . . . HC8195		170	193		60000		17750	11.00/20		Wau 145GK	6–5¼ x6	779	6	258	186–2100	7–3½ x17¾	YFu 4B86♦	12 Own 265W	CD	R	9.21–13.16	T–27454W	W861A	1060	1948	A	TX	91	9 ¼x3 ½x¼	AL
22	. . . . HC8265		182	193		70000		20750	12.00/24‡		Wau 145GK	6–5¼ x6	779	6	258	186–2100	7–3½ x17¾	YFu 4B86♦	12 Own 330W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988	A	JX	91	9 ¼x3 ½x¼	AL
23	. . . . HC8330		171	187		80000		23150	12.00/24		Wau 145GK	6–5¼ x6	779	6	258	186–2100	7–3½ x17¾	YFu4B86-3A92	12 Own 265W	CD	R	9.21–13.16	T–27454W	W861A	1082	1802	A	TX	92	9 ¼x3 ½x¼	A
24	. . . . HC8195H		182	193		48000		16000	10.00/22		Cum HB600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YFu 4B86♦	12 Own 195W	CD	R	6.04–7.31	T–27454W	W861A	1160	1912	A	JX	92	9 ¼x3 ½x¼	A
25	(D) . . . HC8265H		182	193		60000		18100	11.00/20		Cum HBD600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YFu 4B86♦	12 Own 265W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988	A	JX	92	9 ¼x3 ½x¼	AL
26	(D) . . . HC8297H		182	193		70000		21050	12.00/24‡		Cum HBD600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YFu 4B86♦	12 Own 330W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988	A	JX	92	9 ¼x3 ½x¼	AL
27	(D) . . . HC8330H		174	187		80000		23450	12.00/24		Cum HBD600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YFu 4B86♦	12 Own 330W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988	A	JX	91	9 ¼x3 ½x¼	AL
	Truckstell																																
28	(C) . . . F2X28, 2F		156	237		28000		6468	7.50/20		8.25/20–10	Ford	8–3¾ x3¾	239	6	180	100–3800	3–2.49x4.9	N Ford		8F	H	5 83–8.11	Ford	F61HV	502	835	°	TX	82½	7.08x2.88x¼	TL▼
29	(C) F2X29, 2F		134	224		28500		7063	7.50/20		8.25/20–10	Ford	8–3¾ x3¾	239	6	180	100–3800	3–2.49x4.9	N Ford		4 Ford■	8F	H	5 83–8.11	Ford	F61HV	502	835	°	TX	82½	7.08x2.88x¼	TL▼
30	(C) F2X29–0(one) 2F		156	250		28000		7897	7.50/20		8.25/20–10	Ford	8–3½ x4½	337	6	225	145–3600	3–2.67x5.0	Y Ford		4 Ford■	Hy	H 6 8	Ford	F6HV	560	935	°	TX	82½	9x3x.25	TL▼
31	. . . . F2X28–7, 2F		156	250		34000		8100	8.25/20†		9.00/20–10	Ford	8–3½ x4½	337	6	225	145–3600	3–2.67x5.0	Y Ford		5 Ford■	Hy	H 6 8	Ford	F6HV	560	935	°	TX	82½	9x3x.25	TL▼
32	(C) . . . F2X34–7, 2F		156	250		34000		8704	9.00/20‡‡		10.00/20–10	Ford	8–3½ x4½	337	6	225	145–3600	3–2.67x5.0	Y Ford		5 Ford■	8F	H 6.5 –8.87	Ford	F6HV	695	1081	‡‡	TX	82½	9x3x.25	TL▼
33	(C) . . . F2X34–8 2F		156	250		34000		9309	9.00/20		10.0/20–10	Ford	8–3½ x4½	337	6	225	145–3600	3–2.67x5.0	Y Ford		5 Ford■	8F	H 6.5 –8.87	Ford	F6HV	835	1232	‡‡	TX	82½	9x3x.25	TL▼
34	(C) . . . F2X40 2F		156	250		40000		23450	12.00/24		14.00/24△	Cum HBD600	6–4½ x6	672	17	500	150–1800	7–4½ x16½	YFu 4B86♦	12 Own 330W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988	A	JX	91				
35	(C) . . . C2X29, 2F		157	247		28000		6629	7.50/20	D	8.25/20–10	Chev.	6–3¾ x3¾	235	6	192	93–3100	4 Std. Chev	Y Chev.		4 Chev.▼	Hy F	H 6 17	Chev.	C61HV	530	809	°	2I	82¼	8¼x2¾x¼	CT▼
36	(C) C2X29–0(one) 2F		130	224		29000		7204	7.50/20	D	8.25/20–10	Chev.	6–3¾ x3¾	235	6	192	93–3100	4 Std. Chev	Y Chev.		4 Chev.▼	Hy F	H 6 17	Chev.	C61HV	530	809	°	2I	82¼	8¼x2¾x¼	CT▼

▲ Includes Cab.
□ Front only; Rear 8.25/20.
Rear only; Front 11.00/24.
‡ 8031-G Spicer Auxiliary Transmission Available.

△ Auxiliary transmission, Spicer #031.
‡‡ Two speed axle with vacuum shift.
† Front only; Rear 9.00/20.
‡‡ Front only; Rear 10.00/20.
♦ When 11.00/22 tires are required it is necessary to furnish 52 inch axle spacing.
•• Hydraulic Coupling.

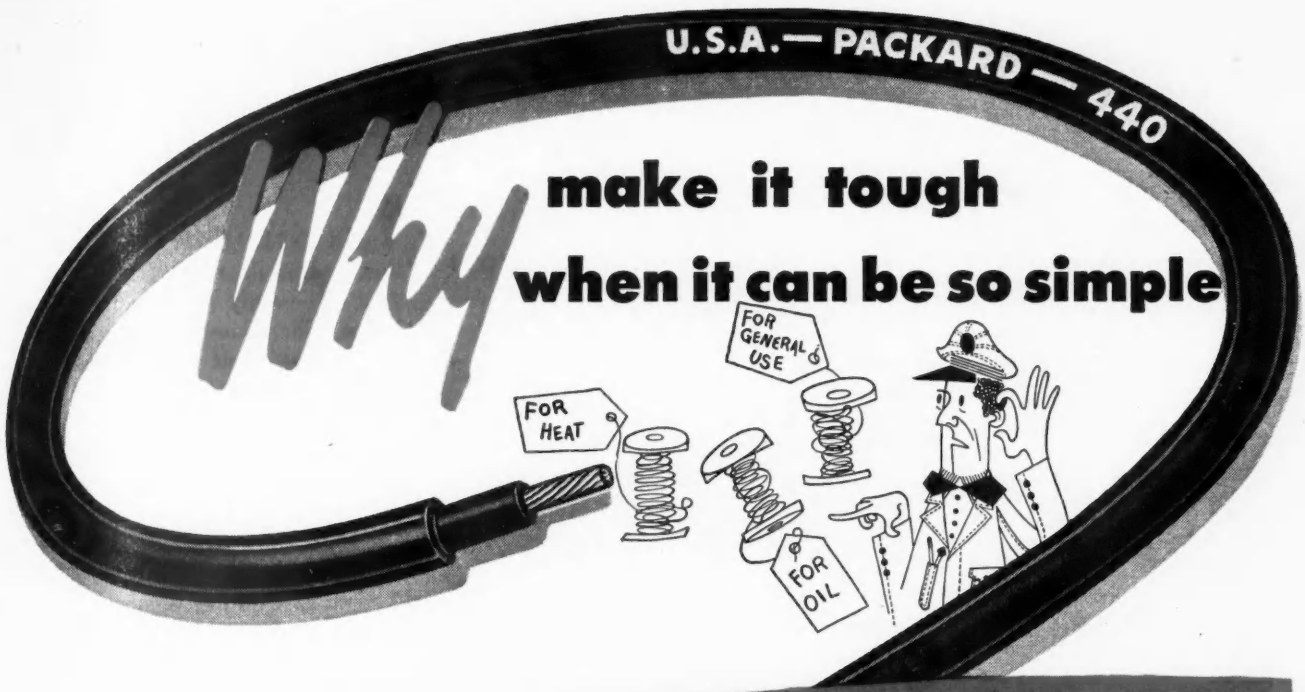
▼ Two speed axle available—6.13–8.10.
♦ Including slip-over reinforcing frame channels.
° Composite Cast Alloy Iron.
§ Cast Alloy Iron.
¶ 6231 Spicer Auxiliary Transmission.

All Budd Wheel distributors can provide the same kind of service illustrated on the opposite page

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Cruse-Crawford Wheel & Rim Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
FARGO—Wheel Service Company
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Wheel & Rim Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel Inc
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MINNEAPOLIS—Wheel Service Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.; Wheels, Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees, Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel, Inc.
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees, Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees, Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.

EXPORT
CLEVELAND—C. O. Brandes, Inc.

CANADA
CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—General Auto Equipment Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.



Use the New Improved

PACKARD FOUR-FORTY CABLE for all jobs!

The new and improved Packard Four-Forty is engineered to meet every requirement of every vehicle in every climate . . . it is the one cable that permits this standardization on *all* jobs.

With Packard Four-Forty, you can expect—and get—*more miles per replacement*. This is because the balanced characteristics of Packard Four-Forty cable provide greater resistance to heat and cold, to abrasion and moisture, to oil, age and corona.

Start now to simplify your ignition cable stock, and to promote better engine performance and worth-while economy . . . standardize on Packard Four-Forty!

THERE'S *MORE* MPR (*Miles Per Replacement) IN PACKARD CABLE

Packard
REG. U.S. PAT. OFF. TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

The Buyers' Market...

By Leonard Westrate
Commercial Car Journal Detroit News Editor

IF GRANTED THAT the industry this year will reach its new-record goal of possibly 10 per cent more vehicles, the question arises as to whether or not it can sell that many. Getting down to figures, estimates for total automobile, truck and bus production in U. S. plants for 1949 gravitate toward a consensus of from 5.5 to 5.6 million vehicles. Passenger car production is expected to increase about a half million units to 3.9 million units, while the general thinking is that truck output will decline from the 1.37 million alltime record production of 1948 to between 1.1 and 1.2 million.

There is some doubt in certain quarters that the public will buy that many vehicles this year. These reservations undoubtedly are premised on the noticeable slump in automobile sales that set in last Fall following the re-imposition of Regulation W and the advent of winter weather. There in no conclusive evidence, however, that the decline marks an industry-wide return to buyer's market even though it is the first noticeable seasonal decline since the end of the war.

Actually, all cars built have been sold without too much trouble. If the men who make and sell automobiles have any trepidation, they are not showing it. In fact, their energy has been expended toward increasing production. That is true of even those companies that have been reported for many months to be in a real or modified buyer's market. Some of the independents have been working six days a week and others have been operating second shifts.

General opinion among the industry leaders is that the buyer's market is here for some companies and will return this year for some others, or perhaps for all of them. However, they have great confidence that the public can be sold all the cars produced, but that the dealers will have to get out and work to do it. M.E. Coyle, executive vice-president of General Motors, said recently that as far as buying ability is concerned,

MOST COMMON COMPLAINTS
POOR SPRING CONSTRUCTION . . 110
POOR SEAT UPHOLSTERY 118 91%
POOR STITCHING and BINDING . . 82
OTHER 31
TOTAL 341

IN ORIGINAL EQUIPMENT

91% OF SEAT COMPLAINTS* CAN BE AVOIDED by installing

TRAVEL COMFORT CUSHIONS

*The survey from which these figures were taken covered 176 fleets . . . 27,198 vehicles. That's a big sample. And a lot of complaints! Of truck seats commonly used, only 10% were found satisfactory.

You can avoid the most common faults . . . with a maximum of convenience and economy.

Install McInerney Travel Comfort Cushions. They are engineered to fit your cab design. The cushion spring constructions are developed scientifically for your particular vehicle, then upholstered and covered by expert "tailors" in your choice of materials. All you do is set them in the job.

The construction of Travel Comfort Cushions is *fully* guaranteed. You are assured of finest spring construction, superior upholstery and excellent workmanship throughout. And drivers of your vehicles will enjoy *sustained* comfort because Travel Comfort Cushions are designed to eliminate road shock and thereby lessen riding fatigue.

THE WAY TO BETTER SEATING: McInerney seating engineers will gladly work with you in developing comfortable, trouble-free seating units for your vehicles.

McInerney SPRING & WIRE COMPANY
837 GODFREY AVENUE, S.W. • GRAND RAPIDS 2, MICHIGAN

• • • What will be the Effect on Prices?

one-third more people now can afford to buy new cars than could do so before the war.

Dealers May Up Trades

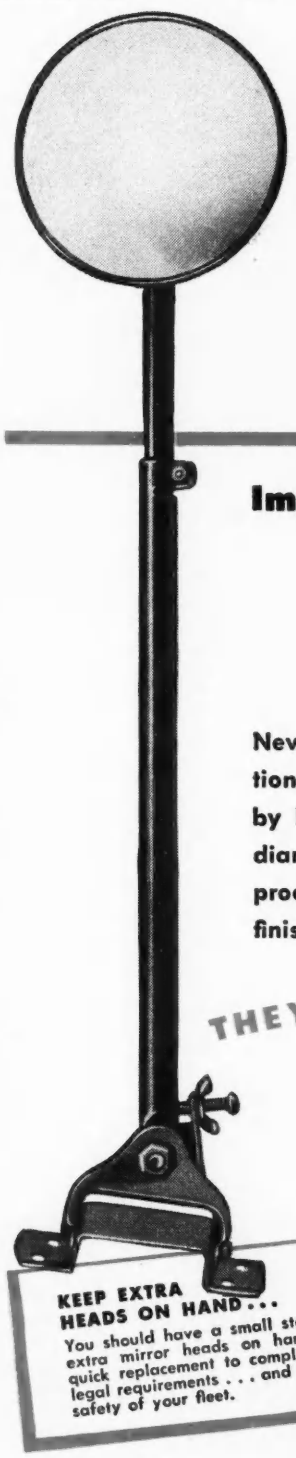
WHAT actually is expected to happen is that as the mad fever for new cars abates, dealers will increase tradein allowances and perhaps shade their discounts a bit to move the vehicles, which in effect would amount to a price cut to the buyer. Everyone is aware of the tremendous amount of slack to be taken out of prices at the dealer level, since discount percentages have remained constant in practically all cases and now apply to base prices which are 70 to as much as 100 per cent higher than they were before the war. As vehicles become harder to sell, as they are expected to do progressively this year, dealers more and more will revert to their previous practices of using part of their discount for trading purposes.

As selling becomes more difficult, pressure for removal or modification of Regulation W is certain to increase. Used car dealers have been against the credit curb generally from the start and in recent weeks more and more new car dealers and dealer organizations have become very vocal against the credit restriction. In general, dealers would like to see the ruling amended to permit 24 months financing on new automobiles having retail delivery price of $2500 or more. Another modification sought is to have the minimum monthly payments lowered from $70 on deals involving more than $1000 credit balance. Actually, many dealers would like to see Regulation W removed entirely.

Only Light Trucks Critical

SO far as truck sales are concerned, 1948 showed a return to the buyer's market in practically all categories except the very lightest models (panels and pickups), which have been in short supply because of the amount of steel involved to build them and for which a large back-log of orders still remains. It is well known that the industry went into 1949 with a considerably larger carryover in dealers' hands than it did at the outset of last year. An interesting comparison is the production for the two years by gvw classifications. Biggest gains were in 5000 lb-and-less and the 5,001-10,000 lb. categories. These were up 110,577 and 75,740

(TURN TO PAGE 126, PLEASE)



Make Yours
NORLIPP
Truck Mirrors

Improved for...

★ *Greater Convenience*
★ *Less Vibration*
★ *Safer Driving*

New adjustable stop holds mirror in exact position while driving, yet allows arm to be raised by hand for quick clearance. Increased arm diameter helps eliminate vibration. Waterproof construction . . . durable baked enamel finish. Norlipp Nos. 425 and 426.

THEY'RE BEST FOR YOUR FLEET

NORLIPP Reflecto QUALITY

See your jobber for complete details!

KEEP EXTRA HEADS ON HAND...
You should have a small stock of extra mirror heads on hand for quick replacement to comply with legal requirements . . . and for the safety of your fleet.

THE NORLIPP Company
5925 S. LOWE AVE., CHICAGO 21, ILL.

For Guts-to-Go, IT'S A 4-WHEEL-DRIVE WONDER!

The "go-anywhere" guts of 4-wheel-drive traction *plus* low-cost operation and maintenance in light-duty service—you get both in Willys-Overland's sensational 'Jeep' 4-Wheel-Drive Truck.

Four-wheel-drive keeps this Willys-Overland truck moving through snow, slush and ice, mud and sand—up steep grades—on and off the road. Its 5300-lb. GVW and 118-inch wheelbase give you a combination of big carrying capacity with easy driving maneuverability.

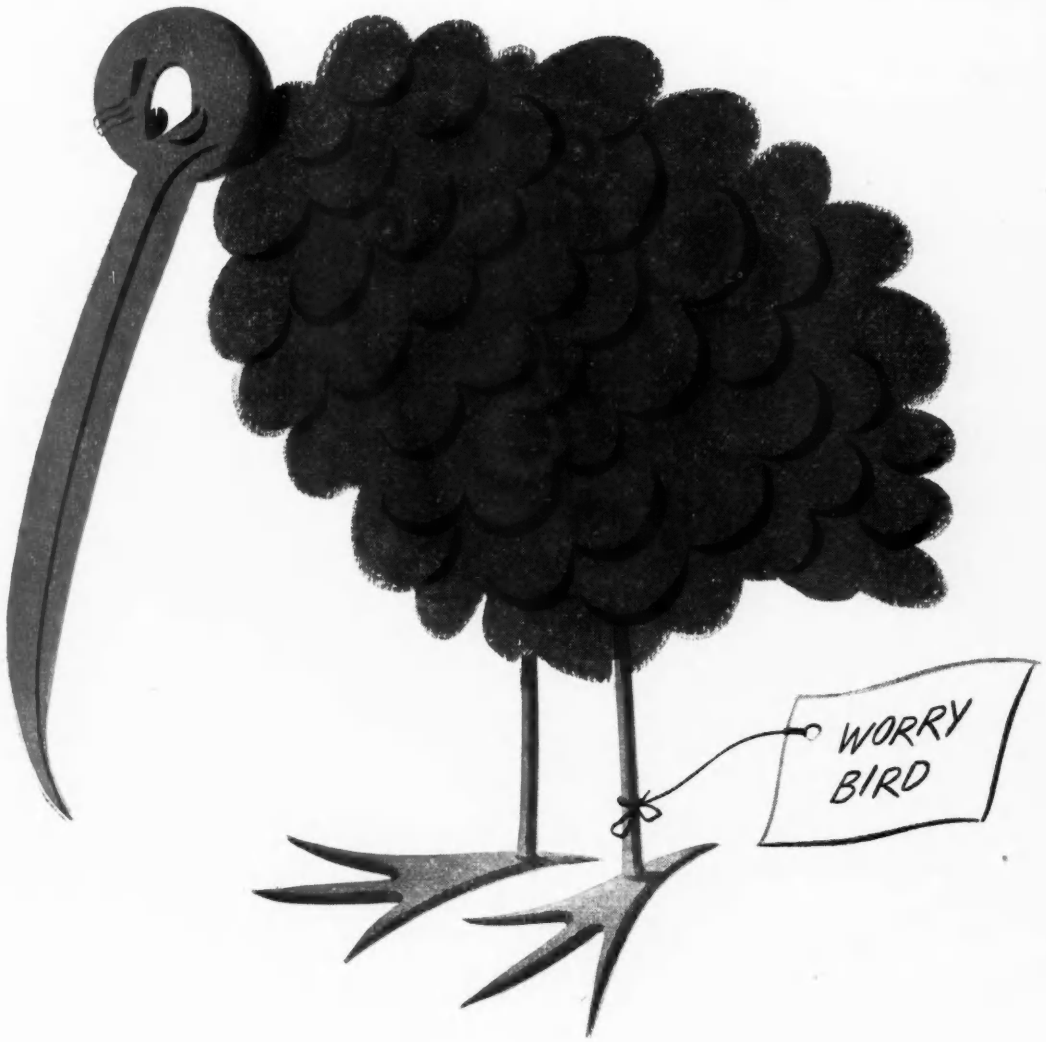
'Jeep' 4-Wheel-Drive Trucks are economical on gas, oil and tires—easy to maintain and repair with minimum shop time.

Visit your Willys-Overland dealer and see the many features of these great 'Jeep' 4-Wheel-Drive Trucks for yourself.

Flat, high-clearance fenders allow plenty of unobstructed room for quick tire changes. Fenders are hard to damage —easy to maintain.

'Jeep'
4-WHEEL-DRIVE
TRUCKS
Cut Hauling Costs

WILLYS-OVERLAND MOTORS • TOLEDO • MAKERS OF AMERICA'S MOST USEFUL VEHICLES



Are you worried by new equipment costs?

GOING to buy new equipment? Or get along with what you have? Either way, you need Quaker State HD Oil. Here's why. Old or new, vehicles have to earn their utmost to offset high replacement costs—and that means better lubrication is a "must." Oil that not only lubricates efficiently but helps keep engines cleaner. Quaker State HD Oil does just that. It's specially designed to lubricate engines better—and longer. Keep them free of ring-clogging, valve-sticking sludge, gum and sticky "varnish." Made solely from pure Pennsylvania grade crude oil, known the world over for quality. Always dependable, uniform, you'll find Quaker State HD Oil can help amazingly to keep your vehicles on the road, making money for your business.

QUAKER STATE HD OIL
AND SUPERFINE LUBRICANTS

Use Quaker State HD Oil for trucks, buses, taxis, tractors, Use Quaker State Motor Oil for passenger cars.

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PENNSYLVANIA

Buyers' Market

Continued from Page 123

units respectively. However, sales in the next two higher weight classifications were down. Sales in the 10,001-14,000 lb. class fell off 79,951 from the eleven-months period of 1947, and the 14,001-16,000 lb. classification was off 4,174 units during the same period. However, sales were ahead of last year in the 16,001-19,500 lb. class by 32,859 units, and in the 19,501-26,000 lb. class were up 6933. In the largest group—over 26,000 lb.—sales were 4,912 units under 1947.

Prices May Go Higher

AS TO where prices for automotive products are going this year no one is quite certain at the moment. Industry leaders have been quite frank in warning that if a fourth round of wage increases develops, prices will edge upward. With the exception of Kaiser-Frazer and Crosley all companies that have announced 1949 models in the past few months have accompanied the introduction with price increases ranging from 3 to 20 per cent. New models coming out early in 1949 undoubtedly will carry higher prices. The automobile manufacturers hope, rather wistfully perhaps, that the wage line will be held this year so that no further increases will be necessary. No one is even suggesting a price cut, however, in view of high operating costs and the fact that while sales have slowed, cars are not backing up in any appreciable numbers anywhere. The industry will watch Spring sales very closely this year since the strength of the normal seasonal upturn will indicate the real strength of the market.

The general belief is that replacement parts business will remain at a very high level this year, although it may not be quite as high as in 1948. Average age of vehicles is slowly declining and with more and more new vehicles becoming available, the rate of scrappage should increase, removing a larger percentage of the old vehicles from the replacement parts market. The automobile industry has expanded parts distribution program since the end of the war and in the postwar period has built about 40 new parts depots in various sections of the country to facilitate distribution.

Put Your Money on the

Thermoid Line

Built for Heavy Duty Service

Thermoid is the best name in fan belts. Thermoid's famous pre-stretching *prevents* stretch, slip, wear and fail, the four steps that, in ordinary fan belts, mean added maintenance costs. Thermoid fan belts always stay the same size.

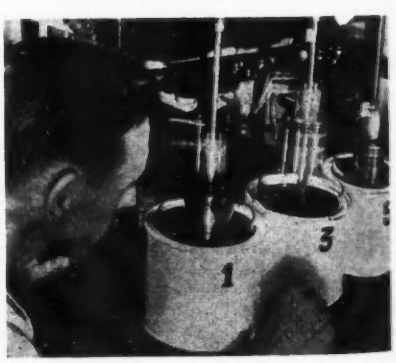
Insist on Thermoid Fan Belts because it's good business to buy the best! Matched sets are available for belt drive applications where needed.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

Piston Thermometer



By using air-cushioned plungers to contact thermocouples placed inside of pistons, The Texas Co. has developed an accurate means of measuring heat within a piston even when moving at 2000 rpm. Exact inside temperatures are vital to the development and testing of new-type lubricants

AC Elements in your Oil Filters will

Dirt-Proof

your engine oil

If you want better protection for your engines, use AC Quality Elements in your oil filters. They "Dirt-Proof" your engine oil . . . and do a *better* job of removing the gum, sludge, and dirt that rob engines of power and efficiency.

AC means highest quality . . . in design, materials, and workmanship. That's the kind of quality you need to make sure your engine oil is truly "Dirt-Proof."

There is no more dependable way to "Dirt-Proof" engine oil than to equip your filters with AC Quality Elements.

AC OIL FILTERS

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

West Coast's Good Will Patrol

Continued from Page 69

party rather than from another employee of WCFF. However, all the Assistant Safety Supervisors are former truck drivers of WCFF. Many insurance companies maintain their own patrol, but the patrol of WCFF is far from that type of patrol. A reprimand, if required, is on-the-spot, and not three weeks later by a report laid on the employer's desk. No reports are made. The patrol is to help, not to snoop.

The number of reprimands given to truck drivers is small. For one thing, the patrol check has brought to light the fact that many bad driving practices and previous reprimands given to truck drivers actually is the fault of, and traces back to, the maintenance crews for failing to make the repairs for which a rig had been placed in the shops.

In one such case an excessive speed of 55 mph checked by the patrol car was called to the attention of the driver. "I was watching my speedometer," the driver explained. "I was rollin' about 45—maybe 48!" The vehicle had just come from the shops and the maintenance report showed the speedometer had been checked. After completing the run the rig was returned to the shop and further check disclosed the speedometer to be inaccurate. In another instance, at one of the regular checking points, a diesel rig was ordered to the shops for excessive smoking, which frequently is a source of complaint from small towns through which the trucks pass. A week later, the same truck was stopped on the highway by one of the Assistant Safety Supervisors on account of the smoke. The driver was reprimanded for not noticing the unusual amount of smoke and for failing to report it on his trip ticket. The driver's reply was that the truck had just come from the shops where it had been checked, and although he had noticed all the smoke he had assumed it couldn't be helped. Returned to the shops a second time for the same deficiency, the trouble was located. The driver was not held at fault in either instance.

Of the reprimands given, the most frequent violation has been for bad passing. Whenever a truck passes an auto on the highway there is always that displacement of air which first tends to blow the passenger car off the road and then tries to suck it into a vacuum. The public is fluent in making reports of these practices to the company headquarters. Although a great amount of this cannot be helped, attention is being stressed on passing techniques.

Next most frequent violation is bunching. Often after stopping for coffee, three or four trucks start out together and make a hazard for others on the highway to pass. It takes a longer stretch and more speed to get safely past three trucks than one. Drivers are instructed to start

(Turn to page 130, please)

You Can Depend on FRAM

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Quality
Production
Research

Quality! Here's proof that you can always depend on Famous Fram Oil Filters . . . America's finest! They're proved by over 10,000,000 motorists . . . used as standard equipment by more than 70 leading car, truck, tractor and engine manufacturers. Fram Filters give top performance in removing damaging abrasives and corrosives, offer maximum filtering area and longer cartridge life. All Fram Filters are backed by Fram's unconditional guarantee.

Production! Fram is the world's largest automotive filter producer. Four big plants turn out over 20,000,000 cartridges a year. The savings of this mass production, plus Fram's longer cartridge life, give Fram users extra economy . . . assure them *lowest clean-oil cost per mile.*

Research! Fram pioneered the first clean-oil type filter, using outside-in flow. Fram's laboratories are constantly testing and experimenting to bring you new and better filters. The two Filters shown at the left are recent products resulting from Fram research. Now—and in the future—look to Fram, leader in oil filter quality, production and research.

Fram Corporation, Providence 16, R. I. *In Canada:* J. C. Adams Co., Ltd., Toronto, Ont.

Fram Gasoline Filter protects finely adjusted modern carburetor mechanisms.

Fram Crankcase Air Filter stops the dirt where most of it enters the crankcase.

WATCH FOR THE BIG ANNOUNCEMENT of Complete Engine Protection . . . Fram's amazing new discovery that seals out engine killing impurities at every vital point where they might enter or be formed. See February issues of top automotive magazines. It's sensational! It means a bigger year for you in '49!

FRAM OIL AIR FUEL FILTERS

Good Will Patrol

Continued from Page 128

15 minutes apart, thereby avoiding bunching on the highway.

"Tachographic Evidence"

SPEED has dropped to bottom place in violations, which isn't strange, since all rigs, and the patrol cars, are equipped with Tachograph clocks.

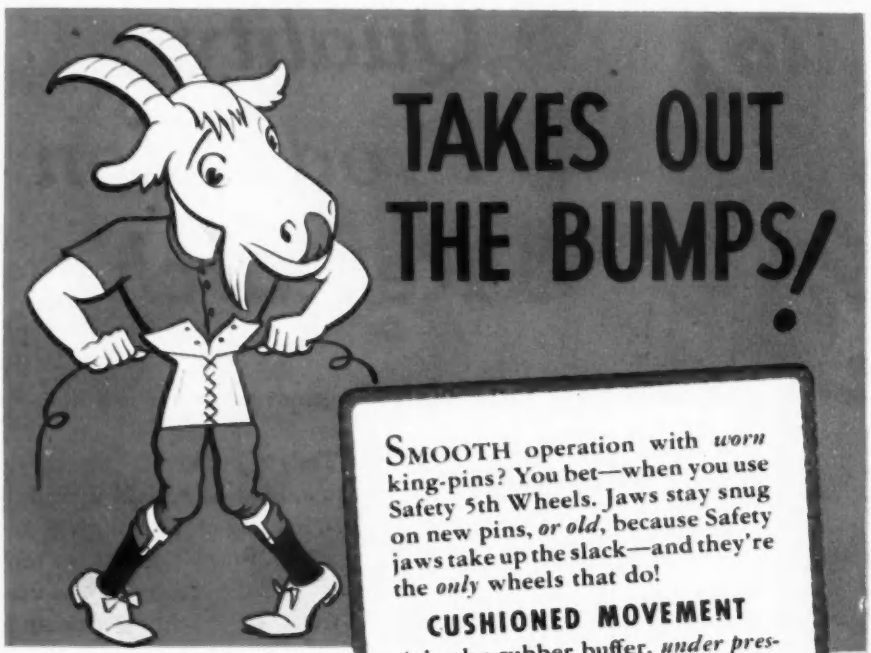
The Tachograph is credited with nearly eliminating speed violations. A few old-time drivers at first disliked this "stool pigeon" but have been won over to its advantages in spectacular ways. Take the case of one driver who resented this new-fangled check on his movements. He was won over completely on the day he pulled onto the highway near an intersection, taking all necessary precaution, and crashed into a passenger car killing two people. The highway police patrol accused the driver of traveling at 65 mph. A witness testified as much. The accident was reconstructed to look like the passenger car was barely moving across the intersection, while the truck was traveling so fast it couldn't stop. The driver insisted he'd only started and couldn't have accelerated to that speed. He insisted he was traveling not more than 25 mph and would have been able to stop except for the passenger car speeding into his path so suddenly he had no time to apply the brakes. The police and witnesses had virtually condemned the truck driver, and had him in a plenty tough position, when the police spotted the tachometer and discovered the driver had been moving for about three minutes and his speed was a steady 22 mph. Witnesses guessed they had misjudged.

When a driver faces an "on-the-spot" reprimand it is all in a spirit of cooperation. Called to his attention immediately the driver is freshly aware that he did such-and-such a thing, whereas three weeks later he would have forgotten and been sure he hadn't. He signs an Observation Report Slip, which is the only record made—and is a record instead of a report. If the driver is not cooperative, he is "turned in" to the supervisor who handles the infraction.

One patrol car has a mounted Trafik camera, cost of which is nearly $300. With this camera it is possible to snap a photo while moving. The driver takes shots of bad driving practices. These photos come in handy for the regularly scheduled safety meetings. He has an interesting collection of photos revealing highway violations of other company trucks and passenger cars, as well as of WCFF. As part of the camera equipment, this patrol car has a speedometer mounted on the left front fender which records the speed in each photo. The patrol driver's own Tachographic reading will show whether he jumped his speed suddenly to record a high rate of speed, or if he actually trailed the truck as he should to record the exact speed of the truck rather than his own.

Each patrol car averages 300 to 400 miles daily except for the days when they are in for check at authorized truck stops. Mr. M. E. Bealy, who is in charge of these cars, says

(TURN TO PAGE 132, PLEASE)



SMOOTH operation with *worn* king-pins? You bet—when you use Safety 5th Wheels. Jaws stay snug on new pins, *or old*, because Safety jaws take up the slack—and they're the *only* wheels that do!

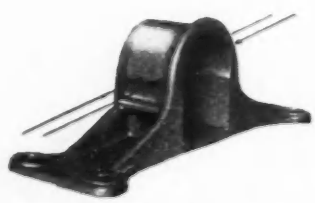
CUSHIONED MOVEMENT

A husky rubber buffer, *under pressure*, keeps jaws tight even when pins are worn as much as 3/16" undersize. This cushioned movement prevents backlash and slack. And, since the lock may be easily shimmed without removing wheel, Safety 5th Wheels can always perform *like new*.

SAFETY, ALWAYS

Safety 5th Wheels can't unlock accidentally—the patented lock is *really safe*. They are strong, easy to operate, and remarkably long lasting. Built for utmost economy and *dependability in service* by the nation's leading producer of couplings for railroads. Automotive Division, American Steel Foundries, 400 N. Michigan Ave., Chicago 11, Illinois.

The new Series 400-C. Dealers and distributors wherever you go.



Sockets on the plate fit well down over the trunnions so that tractor *pull* is transmitted in a *straight line*. Plate won't "lift" under power or braking.

A·S·F *Safety* 5th WHEEL

How to expand your sales force without adding a man

Make your trucks do a selling job for you. Neat, attractive-looking trucks can go a long way toward building favorable opinions of your company and your product. When your trucks look smart, they reflect the smart business policies of your organization. They become confidence-inspiring salesmen.

That's why more and more fleet operators everywhere are using Du Pont DULUX Enamel. They know that DULUX provides long-wearing good looks for hard-working trucks or buses. DULUX keeps its full gloss and color despite stains, weathering, and rough handling on the road. And that means vehicles are in the paint-shop less . . . on the road more. E. I. du Pont de Nemours & Co. (Inc.), Refinish Sales, Wilmington 98, Delaware.

FOR A COMPLETE JOB—Du Pont Preparakote, the primer that *fills*, is specially formulated to work with DULUX. It goes on easily, dries fast, and stays put! From start to *finish*...use Du Pont finishes.

DU PONT
REG. U. S. PAT. OFF.
DULUX
REG. U. S. PAT. OFF.
ENAMEL
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

"Well, you wanted to settle it out of court!"

Put Your Money on the

Thermoid Line

Built for Heavy Duty Service

Thermoid Brake Blocks are made to give you reliable performance under ALL operating conditions, hot or cold, wet or dry—they are not a compromising adaptation. They last longer and reduce "downtime" maintenance costs.

For heavy duty applications requiring up to ½-inch thick braking materials, Thermoid CBB Sets are dual-friction, specially molded.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

Good Will Patrol

Continued from Page 130

each averages about three aid stops a day in addition to assistance given the trucks.

The causes of break-downs among motorists are numerous. Fan belts give trouble, and flat tires. People still run out of gasoline. Vapor lock stalls many. The WCFF records do not as yet indicate any clear-cut analysis of any improvements in automobile manufacture that would prevent break-downs, but Mel Strock, San Francisco manager, believes automobile manufacturers could improve, or redesign, fan belts so they didn't break. But, generally, he stated, "The greater need is for good common sense in driving. Have your car checked before starting a trip. And drive carefully."

Motorists May Fight . . .

WHAT is the reaction of the motoring public to all this free service? Sometimes it is astonishing! Most want to fight! This reaction is reading understood when you picture a motorist who has been sweating under a hot sun for an hour with a flat tire. He'd found his spare flat and his pump sucking more than blowing. He was probably cussing his garageman when the small red-and-white car stopped. Innocently enough the driver probably asked, "Need any help?" Right then is when many a motorist wants to punch the Assistant Safety Supervisor smack in the kisser! Other motorists fear it is a racket and hesitate to accept any help. Some fear a trick and insist on making their own repairs. The Assistant Safety Supervisor has to do a convincing selling job as he efficiently brings forth tools, and parts, and bends to the task of helping. "This is a free service offered by West Coast Fast Freight Trucking Company," he says. "I'm paid to help you. No obligation and no charge. You see, West Coast Fast Freight have all these trucks on the highway—" and he goes on to relate what it is all about.

If serious breakdowns, are encountered the courteous patrol tows the motorist to a garage, if possible, and if not, they see that help is sum-

(Turn to page 134, please)

Another Crescent Innovation!

CRESCENT-WIRY JOE MAROON PLASTIC CABLES

CRESCENT LEADS AGAIN! *Now*, the famous Crescent-Wiry Joe Maroon Cables are *plastic* to make them even better than ever before!

These advantages of plastic are universally established:

- **PLASTIC** is impervious to oil, grease, heat, abrasion, *and is highly resistant to acid.*
- **PLASTIC** is extremely flexible.
- **PLASTIC** *does not support flame.*

Add these features to the already outstanding list of Crescent-Wiry Joe Maroon Cable features and you have the *new* CRESCENT-WIRY JOE

MAROON PLASTIC CABLES!

√ Check the wire on every job!

WHEN NEXT IN OUR NEIGHBORHOOD, DROP IN—SEE HOW CRESCENT-WIRY JOE AUTOMOTIVE CABLE IS MADE FROM COPPER TO FINISHED PRODUCT IN ONE PLANT UNDER ONE ROOF

Good Will Patrol

Continued from Page 132

moned. This service is to assist the motorist, and any towing service performed has not been the source of any complaints from garages.

But They Like It

THE motorist is not asked to sign a receipt for help or for any parts used. No accounting of the parts is actually made after they are placed in stock in the patrol car. The motorist as simply handed a normal business card. At the start, WCFF presented everyone they assisted with a special little "courtesy card" telling about their service, but this has been discarded because WCFF feels it looks too much like advertising. Nor do they ask for the names of those they've assisted, since many motorists might feel that later on a salesman would call trying to solicit business. It is strictly a courtesy. "And after all," says T. M. Swan, Supt. of Operations, "maybe we only gave the man a little water, or five gallons of gasoline. Maybe patched a tire. You can't ask a lot of questions or have him fill out a report for that kind of politeness. The amount of good we're doing shows up on the tachograph and that's record enough!"

When the motorist is again rolling happily along the highway and overtakes a laboring truck on a hill, courteously allowing as much space to pass as possible, he looks to see if it is WCFF. And if it is he waves and gets that fine, warm feeling of meeting a friendly neighbor far from home.

It's proving to be a bang-up job of Public Relations!

END

(Please resume your reading on P. 70)

REAR VIEW MIRRORS

PRE-SET SHAFT

RIGID SHAFT LOCKNUT

Set this mirror where you want it for best view, then raise the arm to clear any obstruction and you can return it to original position without resetting nuts, bolts or screws. Saves time — and saves mirror replacement costs. Shaft is adjustable from 19" to 29" — is firmly held with shaft squeeze-nut so that it can't slip. More angles of view — with clear or non-glare mirror on ball stud coupling. Brackets for hinge or body mounting. Write for details and prices of this better Grote mirror.

the Brightest Spot on the Road — Grote — MANUFACTURING CO., INC. GROTE SQUARE BELLEVUE, KENTUCKY

Pioneers in PLASTIC AUTOMOTIVE LENSES AND REFLECTORS

PMTA Safety Patrol

PENNSYLVANIA MOTOR TRUCK ASSOCIATION, INC.
TELEGRAPH BUILDING - HARRISBURG, PENNA.
SAFETY PATROL - OBSERVATION REPORT

Date _____ A.M. _____ P.M. _____ (attach)
Name of Company Owning vehicle
Address
Licnse No. * (Be Accurate)
Road Conditions
*Truck
Weather
*Tractor
*Trailer
Type Road
Location: Rt. No.
Near
Traveling: N. S. E. W.
Toward
Speed: Average High
Speedometer Test

CHECK OBSERVATIONS

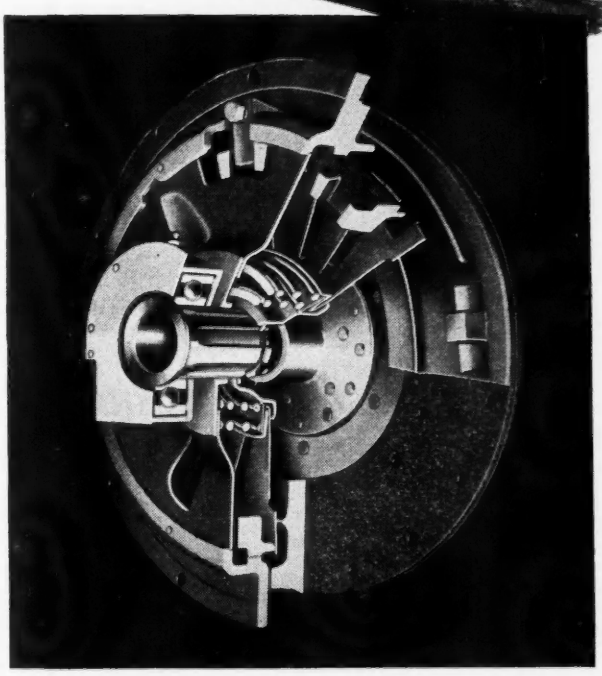
Caravaning		Lights	
Cutting in		R. R. Crossing	
Direction Signal		Reckless Driving	
Failure to Permit Passing		Riders	
		Road Hogging	
Following Too Close		Tires	
Improper Parking		Too Fast for Conditions	
Improper Passing		Torches - Flags	

Act of Courtesy (Explain below)
Remarks:

Pennsylvania Motor Truck Association has instituted a cooperative road patrol as an aid to Pennsylvania fleetmen. At top, Governor Duff gives official send off to H. R. Roberts, PMTA's safety director. The complete report to be used by patrol is also shown

Beautiful Action

exemplified to the highest degree in automotive power transmission in the Spicer Brown-Lipe and Auburn Clutches



SPICER MANUFACTURING
Division of Dana Corporation
TOLEDO 1, OHIO

45 YEARS OF Spicer SERVICE

TRANSMISSIONS • PASSENGER CAR AXLES • CLUTCHES
PARISH FRAMES • STAMPINGS • TORQUE CONVERTERS • UNIVERSAL JOINTS
SPICER "BROWN-LIPE" GEAR BOXES • RAILWAY GENERATOR DRIVES

Diesel vs Gasoline Costs

Continued from Page 67

tors as public acceptance. However, from the standpoint of costs, he pointed out that, while the initial cost of a diesel-powered bus is greater than for similar bus with a gasoline engine, there is a saving of approximately $500 per bus per year in fuel costs in favor of the diesel-powered bus under identical operating conditions. From the standpoint of maintenance cost, he finds that there is little, if any, difference.

The Purchase Price

"THE first cost," Mr. Hatch said, "or purchase price, for buses equipped with diesel engines has been, and still is, somewhat higher for the diesel engine in buses of similar size and quality."

"In 1946, we secured bids on several hundred 45-passenger buses for city operation in which we called for the cost of engines to be purchased as spare units. The additional first cost for a diesel engine of comparable size and quality for large city buses was approximately $1,000 more than for the gasoline engine. The trend in the latest figures shows a tendency to reduce the difference. However, up to the present time, the diesel engine's first cost is more than the gasoline engine of comparable size and quality."

$500 Fuel Saved per Bus Year

AS FOR fuel cost, Mr. Hatch quoted figures covering the Brooklyn division in which there were 250 buses with electric drive, 60 of which were equipped with diesel engines and 190 with gasoline engines made by the same company. Bus size and general design were the same in every way, except for engine design.

"My records show," said Mr. Hatch, "that in the first five months of 1945, the average miles per gallon for diesel engines was 2.91, and for gasoline engines, 1.78. In terms of gallons of fuel per mile, we have .3436 for diesel engines and .5618 for gasoline engines.

"At that time we were paying 7.5 cents per gallon for diesel fuel, and 9.31 cents per gallon for gasoline. In the cost of fuel per mile, we have 2.58 cents for the diesel engine and 5.23 for the gasoline engine, or a saving of 2.65 cents per mile.

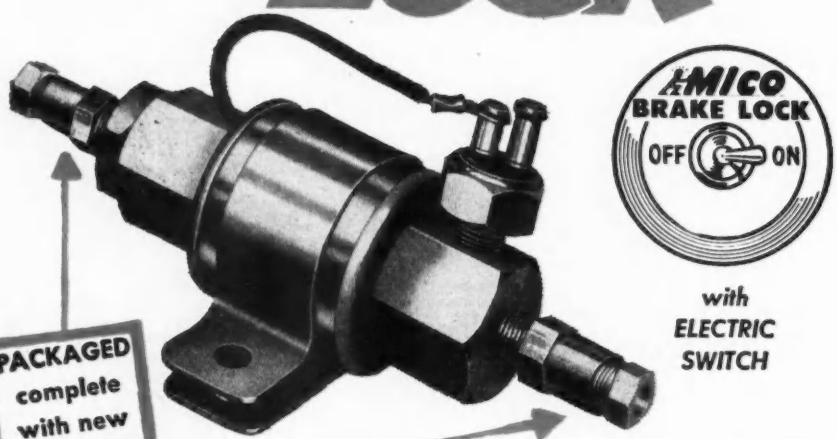
"Data for the complete year of 1945 showed 2.97 mpg for diesel engines, and 1.85 mpg for buses equipped with gasoline engines." With an average of 45,000 miles per bus year, the diesel engine would use 15,185 gal and the gasoline engine 24,324 gal, a saving of 9,139 gal of fuel. At an average cost of 9.31 cents per gallon for gasoline, and 7.5 cents per gallon for diesel fuel, this represents a saving of $1,024.69 per bus year.

"The cost per gallon for gasoline and diesel fuel has increased considerably within the last year. For example, the average cost of gasoline for all our divisions for 12 months ending June 1948 was 11.55 cents per

(TURN TO PAGE 138, PLEASE)

MICO HYDRAULIC EMERGENCY BRAKE LOCK

Model No. 2200



with ELECTRIC SWITCH

PACKAGED complete with new self-flaring fittings

U. S. Patent Nos. 2,181,717 and 2,289,563
Canadian Patent No. 407,184

A REVELATION IN EMERGENCY BRAKES!

Here is dependable holding power never before attained through *any* emergency brake. A flip of the switch, a step on the pedal and the biggest truck, the biggest load is *safe!*

The *Mico* BRAKE LOCK is a *must* for Multi-Stop delivery trucks and trucks equipped with power Take-Off devices.

The *Mico* BRAKE LOCK converts any hydraulic braking system into a powerful, reliable emergency brake lock. Installation is simple. It can readily be applied to any hydraulic braking system regardless of year, make, model, size and rated capacity.

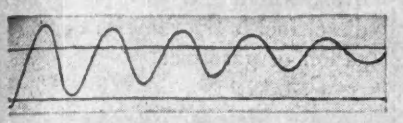
Scientific designing and engineering of this self-contained unit eliminates any outward moving parts or shafts. The trouble-free *Mico* BRAKE LOCK contains no packing or gaskets that can ever cause loss of fluid from the braking system.

Write or Wire for Catalog and name of your nearest MICO Distributor

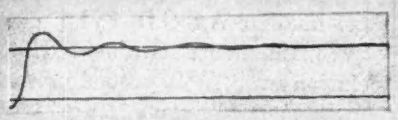
MINNESOTA AUTOMOTIVE, Inc.
1328 HENNEPIN AVENUE • MINNEAPOLIS 3, MINNESOTA

When a Man is "All In"

He Can't Go All Out for You



STANDARD TRUCK CUSHIONS — Poor take-up of shock followed by rough rebounds. Drivers take up to 50,000 shocks like this a day.



BOSTROM HYDRAULIC SEAT—Soaks up the initial shock and levels out—like a passenger car ride.

THESE ENGINEERING RIDE-GRAPHS tell you better than words why . . . Safety slips! Schedules lag! Equipment and cargoes take abuse!

Yes . . . Bostrom hydraulic seats more than pay for themselves by reducing driver fatigue. You get additional savings by cutting seat repair bills. Ask your dealer for a demonstration. For free folder, "12 Eye Openers Concerning Truck Seats" write:

BOSTROM MFG. COMPANY
133 West Oregon Street • Milwaukee 4, Wisconsin

There is NO Substitute for a Bostrom Ride!

BOSTROM

Bostrom Hydraulic Seats now standard or optional equipment on the following trucks: **GMC, Diamond T, Federal, Hendrickson, Peterbuilt Walter, Ward La France, FWD, Dart, Oshkosh, and Coleman.** ***Specify Bostrom Model 47 Seats on your new trucks.***

Diesel vs Gasoline

Continued from Page 136

gal. The diesel fuel average cost for all divisions, and for the same 12 months ending June, 1948, was 11.72 cents per gal.

"In the 12 months ending June 30, 1948, we used 11,644,763 gal of gasoline at an average bus mile per gallon of 2.76. In the same period we used 3,079,677 gal of diesel fuel at 3.27 mpg. With an average of 45,000 miles per bus year and at 2.76 mpg, or 16,304 gal of gasoline, at the average cost of 11.55 per gal, the cost per bus per year is $1883.11.

"Diesel fuel required for one bus per year, at the fleet average of 3.27 mpg, is 13,761 gal. At an average cost of 11.72 cents per gal, the diesel fuel would cost $1612.58. This is a saving of $270.52 per bus per year, in favor of the diesel bus running 45,000 miles per year.

"Taking an average mileage of 45,000 per bus per year, using the report of the Queens division where we have diesels purchased since the war, the figures show 2.64 mpg of gasoline compared with 4.31 mpg of diesel fuel; which would use 17,045 gal of gasoline at a cost of 12 cents per gal, or 10,441 gal of diesel fuel at a cost of 11.72 cents per gal. The saving is $821.81 in favor of the diesel engine."

Mr. Hatch points out that, in this study of fuel consumption, due consideration was given to such variables as vehicle design, engine design, and operating conditions. By way of summary he adds, "After reviewing our records over a period, I am convinced that there is a saving of approximately $500 per bus year in fuel costs with the diesel engine over the gasoline engine in our type of service for buses of the 40 passenger size and over, where the cost per gallon of diesel fuel is the same as the cost per gallon of gasoline."

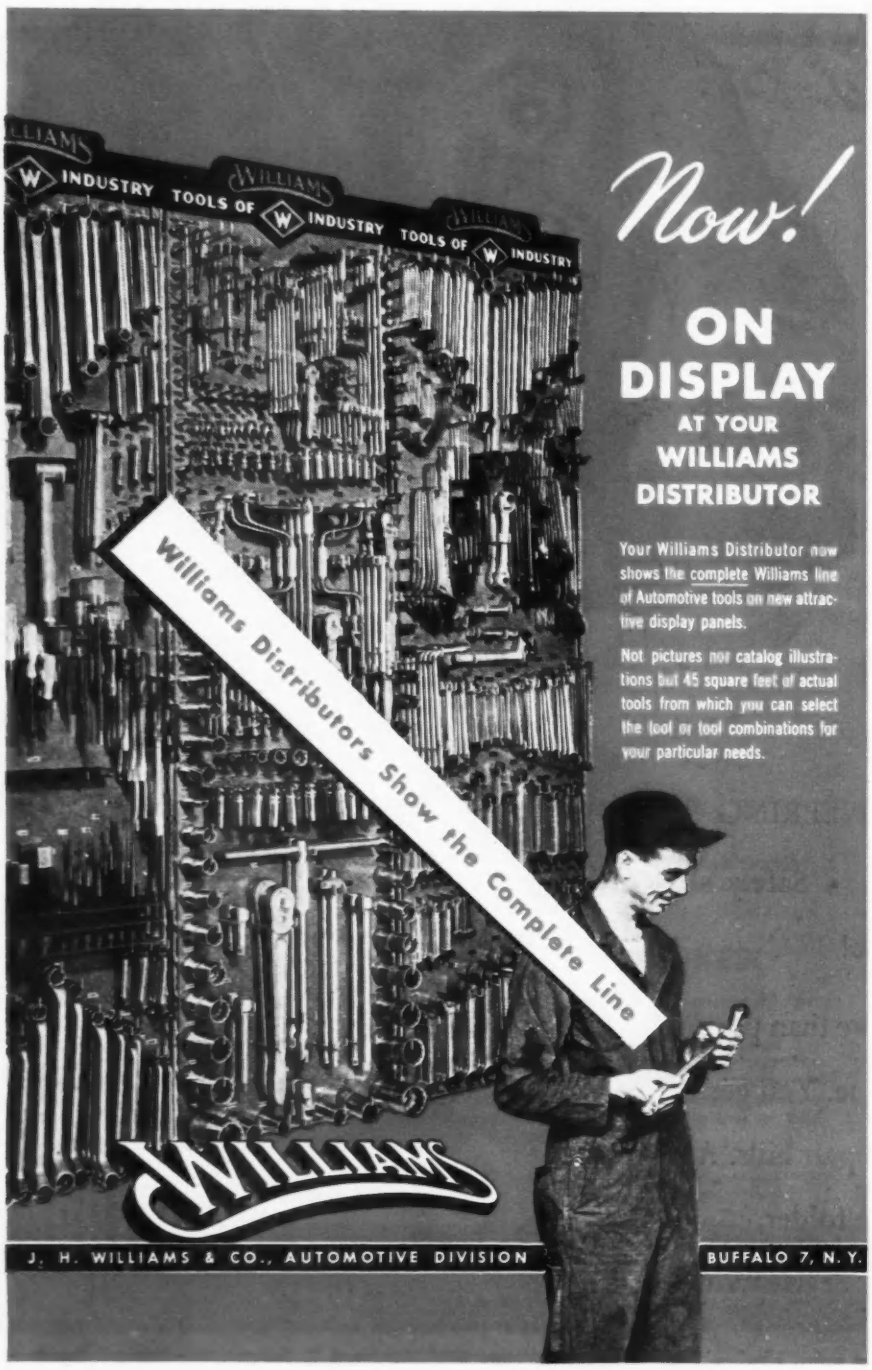
Maintenance Cost

THE next cost factor considered by Mr. Hatch was maintenance. He made a detailed comparison, using the familiar A,B,C,D, and E preventive maintenance schedules. His conclusion was, "With a good preventive maintenance system, there is very little, if any, difference in the inspection cost between the diesel and the gasoline engine.

"The man-hours to overhaul the diesel engine compares favorably with that of the gasoline engine of similar size and good design. The cost of material replacement parts, especially in the fuel system, is generally conceded to be greater for the diesel engine. We are very happy to spend $50, or even $100, per year more on material to save $500 per year per bus in fuel costs."

END

(Please resume your reading on P. 68)


INDUSTRY TOOLS OF INDUSTRY TOOLS OF INDUSTRY
Now!
ON DISPLAY
AT YOUR WILLIAMS DISTRIBUTOR
Your Williams Distributor now shows the complete Williams line of Automotive tools on new attractive display panels.
Not pictures nor catalog illustrations but 45 square feet of actual tools from which you can select the tool or tool combinations for your particular needs.
Williams Distributors Show the Complete Line
WILLIAMS
J. H. WILLIAMS & CO., AUTOMOTIVE DIVISION
BUFFALO 7, N. Y.

Atomic Fire Fighter

This new 750-gal FWD fire fighter will give additional protection to Oakridge, Tenn., home of atomic energy

Plenty tough to balance!

Brakes, too, are hard to balance . . . as you've probably discovered if you've tried to reline all brakes with only one type of lining!

Different shoes, even in the same type brake, do different work, because forward and reverse shoes don't carry the same share of the load, and need different types of blocks. And different *types* of brakes vary widely in brake action.

To keep all these factors in balance is a real problem. Grey-Rock solves that problem by using several different types of friction material to give you *balanced* brake action!

Results: uniform wear, longer wear, lower maintenance costs. And smoother, safer stops! See your Grey-Rock jobber today for balanced linings. He has the right combinations, factory-combined and factory-packaged for your particular vehicles. In unusual cases, he'll arrange an on-the-spot survey by Grey-Rock factory experts.

For linings ½" or less in thickness, use GREY-ROCK BALANCED TRUCKSETS . . . factory-combined and accurately drilled for popular light and medium trucks.

Grey-Rock BLOCKS for Heavy Duty Brakes

BOLT-ON BLOCKS for heavy-duty buses, trucks, and trailers
BALANCED TRUCKSETS for light and medium trucks
BALANCED BRAKSETS for passenger cars (riveted or bonded)
STANDARD WYRBAC SETS of Grey-Rock quality
VEE-LOK, Molded and Semi-Metallic CLUTCH FACINGS
FAN BELTS
RADIATOR HOSE

UNITED STATES ASBESTOS DIVISION
of Raybestos-Manhattan, Inc., Manheim, Pa.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Mechanical Rubber Products • Rubber Covered Equipment • Asbestos Textiles • Packings • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls.

LINDSAY

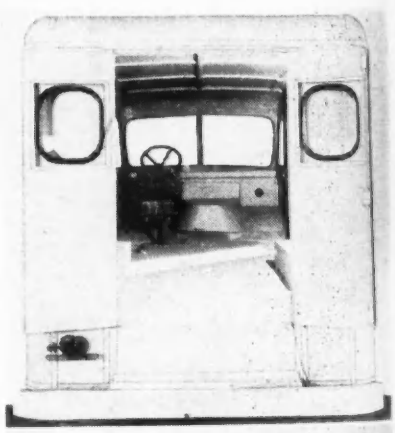
Structure Bodies for Forward Control Ford

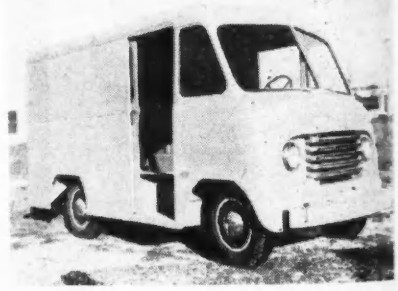
LINDSAY STRUCTURE bodies for the new Ford F-3 forward-control chassis are now available from 26 authorized LS builders located throughout the country, according to an announcement from The Lindsay Corp., Melrose Park, Ill. The new bodies are available in two sizes to fit the 104-in. and 122-in. wheelbase chassis. The smaller is 8 ft long, the larger 9½ ft long, behind driver's seat, and both are 74 in. wide and 68 in. high.

Extra-width sliding doors on each side provide 30 in. of clear opening span. Three rear door options are available, namely, full-width double doors, basic double doors, and express-type double doors with clear opening spans of 72¼ in., 59¼ in. and 37¼ in., respectively.

Through the co-operation of the Ford Motor Co., Lindsay engineers were able to keep step with developments on this new unit so that the Lindsay Structure pilot model could be built without delay on one of the first production chassis.

The body for the new Ford Parcel Delivery unit has the same repair features of other Lindsay Structure types. In case of accident only damaged sections need be replaced and repairs can be quickly made from the outside.





TOP Interior view taken through 37¼-in. express type doors. Other door openings are available up to 72¼ width

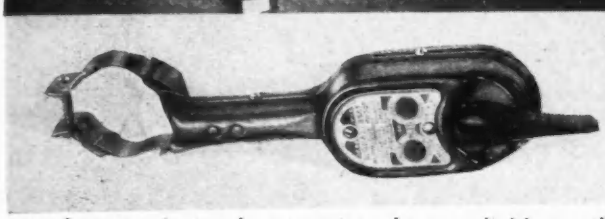
ABOVE 30-in. sliding side doors provide easy access to driver's seat

STANDARD EQUIPMENT ON NATIONALLY ADVERTISED MOTOR TRUCKS

Signal-Stat

DIRECTIONAL SIGNALS

FEATURING THE PATENTED BURN-OUT-PROOF SWITCH



Catalog available showing complete lines.

A directional signal system is only as reliable as the switch that controls it. That's why Signal-Stat is favored by truck and fleet operators everywhere: it features exclusively, the only Burn-Out-Proof Switch. The only switch that can be used with or without flashers. Lamp specifications include aluminum reflectors, brass sockets, rim gaskets, plastic lenses, maximum visibility. Multiple position mountings eliminate need for extra parts and permit mounting to variable positions without base adaptors. Wired, ready to install. Popular with operators because it reduces accidents and saves on insurance premiums.

Other Signal-Stat Products:
FUSE-IN-LINE RECEPTACLES
EMERGENCY BRAKE LITES
STOPLITE PILOTS

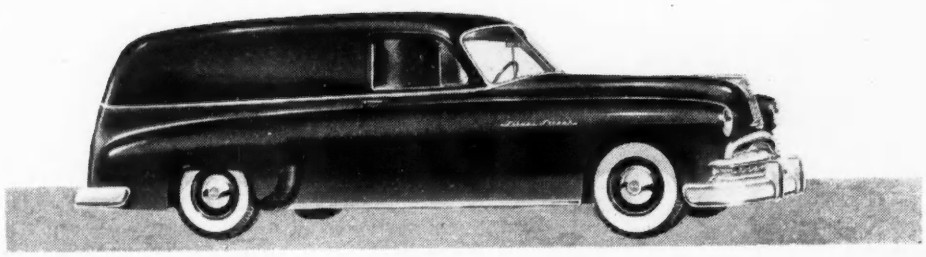
Signal-Stat Directional Signals Approved By:
- States requiring Directional Signals.
- S.E.M.A. Safety Equipment Manufacturers Association
- AAMVA—Association of American Motor Vehicles Administrators certificate No. 1

Signal-Stat CORPORATION
SIGNAL-STAT BUILDING
1430 Herkimer St., Brooklyn 33, N. Y.

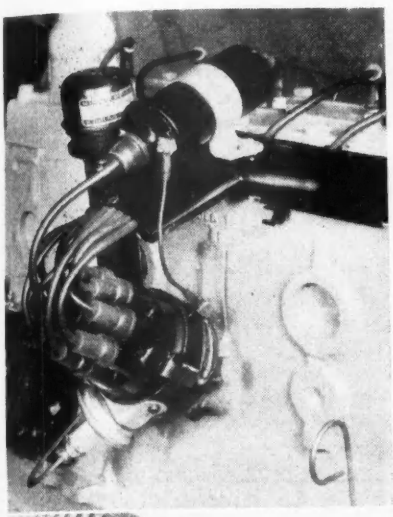
All Signal-Stat jobbers are supplied with complete stocks and equipped to offer prompt service through quick factory contacts.

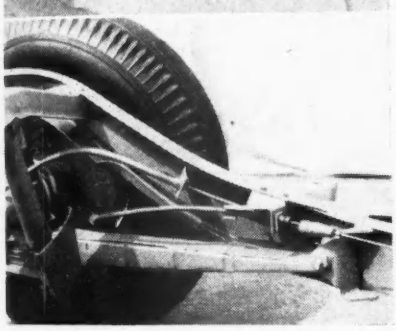
Pontiac Sedan Delivery added to '49 Line

RIGHT Pontiac's new sedan delivery model



BELOW Coil is on head close to distributor





Rear shocks are diagonally mounted with protective shield

WITH THE INTRODUCTION of its 1949 line of passenger cars, Pontiac, for the first time in many years, offers a sedan delivery model. It is built on the 120-in. wheelbase passenger car chassis and incorporates the new styling and engineering features found in the passenger car line.

Among styling improvements it will be noted that front fenders now blend into the body contours, rear fenders are part of the body stamping, windshields have been widened by 5½ in., and front seats by 2½ in.

(TURN TO PAGE 144, PLEASE)

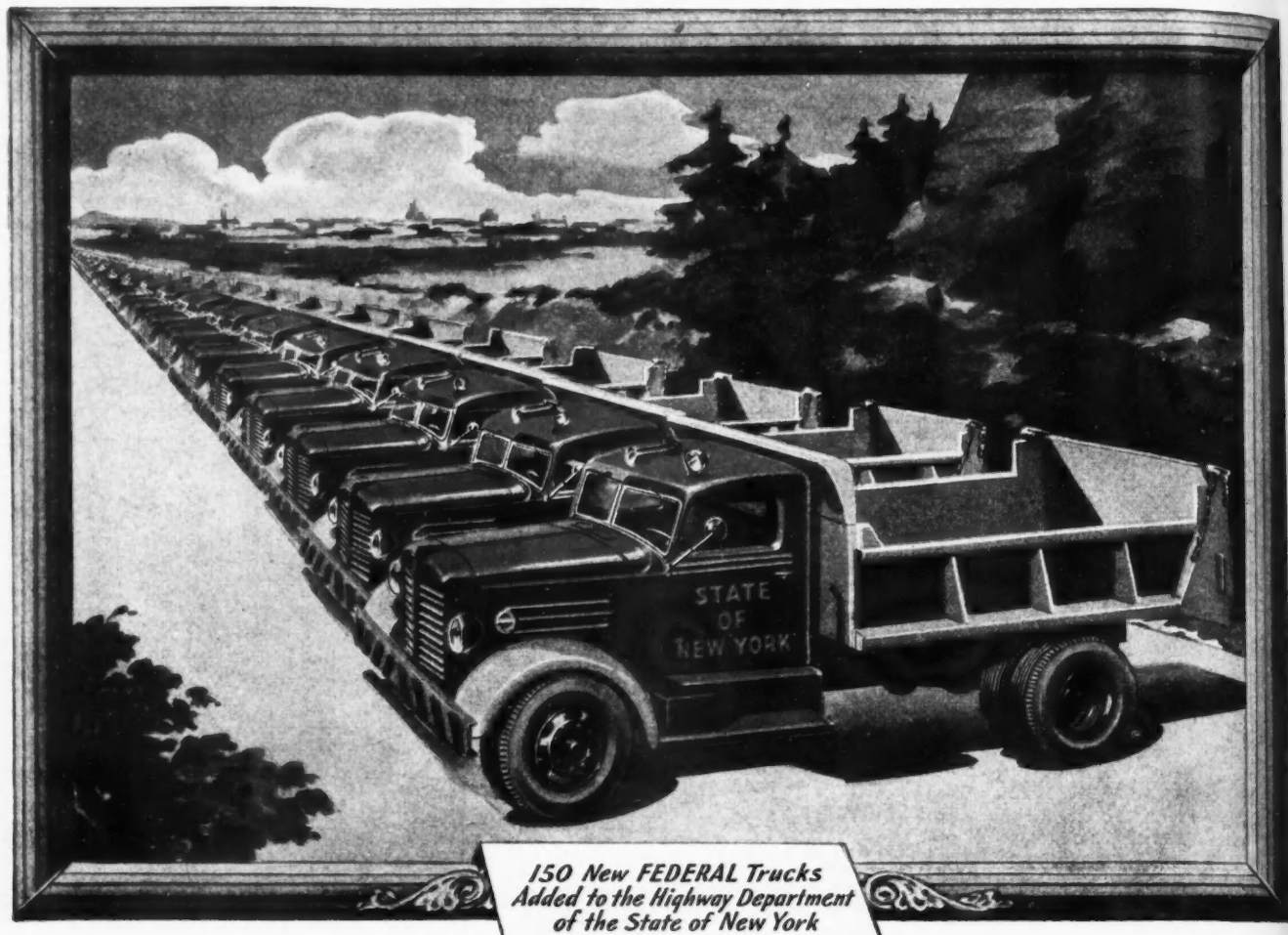
GUNITE truck wheels... for better trucking

FRONT AND DUAL REAR IN 20", 22", AND 24" SIZES TO FIT MANY POPULAR TYPES OF TRUCK AXLES

GUNITE Cast Wheels — both Truck Fronts and Truck Dual Rears — are made with many distinctive design features for greater strength, safety, and durability. These include deep-spoke structure that provides practically straight-line stress transfer from rim to outer bearing; extra-wide, non-slip lugs on floating rim bolts; and ventilated spacer (on rears). Gunites are made of strong, controlled-quality cast steel (except for 20" fronts, which are malleable iron). Accurate machining assures proper fit on standard axles. Famous Gunite Brake Drums are integral parts of these cast wheel assemblies. *Buy* GUNITES — *for better trucking!*

MADE BY GUNITE FOUNDRIES ROCKFORD, ILLINOIS

GUNITE WHEELS ARE CAST AND FINISHED IN GUNITE'S OWN FOUNDRIES AND MACHINE SHOPS



150 New FEDERAL Trucks Added to the Highway Department of the State of New York

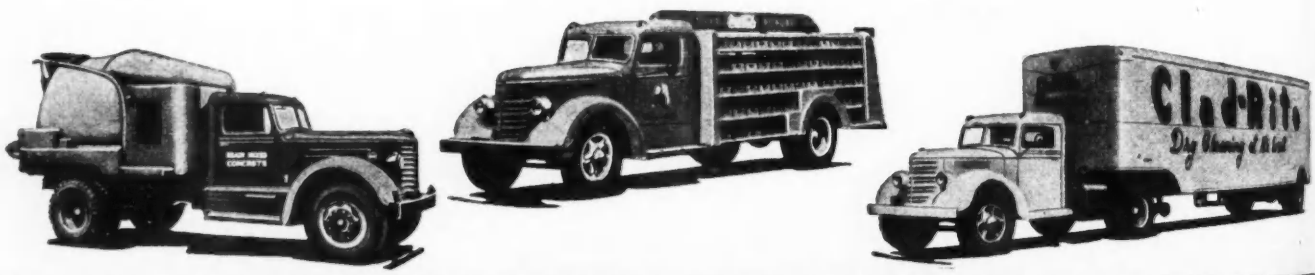
FEDERALS HAVE WON *By Costing Less to Run!*

For 38 years Federal has been building trucks that have enjoyed an outstanding reputation for ruggedness, dependability, low up keep cost, long life and bed-rock operating economy.

Men in a position to judge—fleet owners, maintenance superintendents, service mechanics, dispatchers and drivers—have learned by keeping comparative cost records, checking lay-up time, servicing and running costs that Federal Trucks have those qualities of endurance, economy and rugged all-truck performance that insure owner satisfaction.

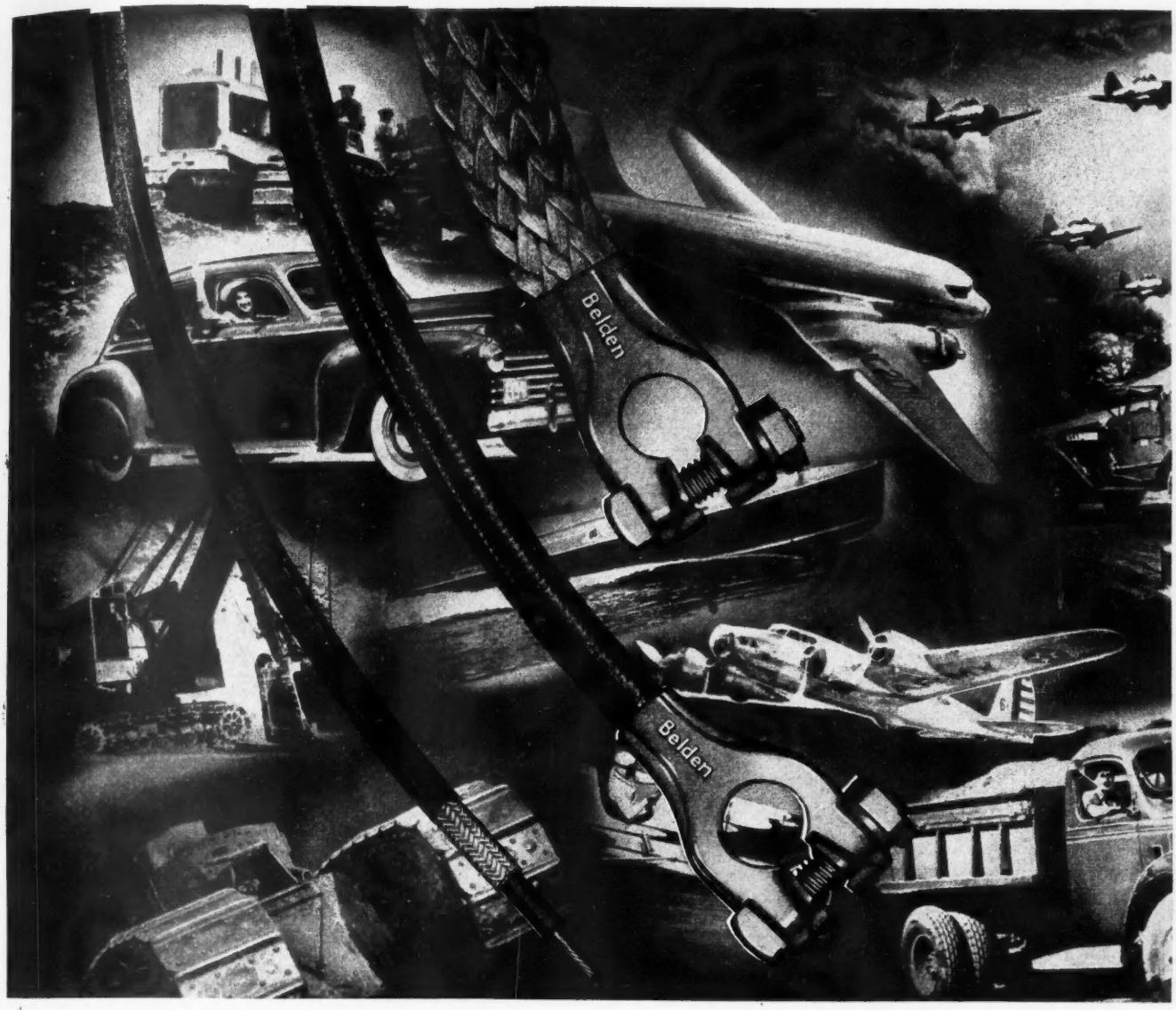
40 models—providing over 370 truck combinations—for practically all types of on and off the highway work, including six wheelers (gasoline or Diesel) with capacities ranging from ¾ to 35 tons.

FEDERAL MOTOR TRUCK CO. • DETROIT 9, MICHIGAN



FEDERAL TRUCKS

Since 1910 . . . Known in Every Country—Sold on Every Continent



MORE MILES • MORE SATISFACTION

with Belden SPARK PLUG WIRES
BATTERY CABLES
PRIMARY WIRES

FOR EVERY AUTOMOTIVE WIRING NEED

Battery Cables • Spark Plug Wires
Lighting Wires
Cordlites, Extension Cords, and Tools

Belden *Automotive* **WIRE**

Pontiac '49 Line

Continued from Page 141

Mechanical changes include a forward shift of the powerplant, a new box-girder type frame with four-way cantilever cross member bracing, and a newly designed front end suspension with direct acting shock-absorbers mounted inside the coil springs and a heavier front stabilizer bar. Rear shocks are mounted diagonally ahead of the rear axle and protected against road damage by heavy steel shields.

The ignition coil is now mounted on the engine to reduce the length of the high tension lead and timing marks have been moved from the flywheel to crankshaft balancer to increase accessibility. Starter switch is now on the instrument panel, and accessory wiring has been grouped and run through a fuse and terminal block.

A new-type clutch bearing consists of a steel cup supporting a rubber-insulated brass bushing. It is packed for life. Front wheel brakes have been increased from 2 to 2¼ in. to compensate for the increased weight on the front end.

The basic components remain virtually unchanged and, as in the past, a choice of 6 or 8-cyl engines will be available.

Tough U.S. AXLES

Each U.S. Axle is designed to do its specific job correctly and with fewer breakdowns. Because they're built tough, U.S. Axles help you keep trouble free schedules with lower maintenance costs. There's a type and size for nearly every automotive vehicle on the road. Ask your Jobber.

FREE: Latest catalog. Contains listings U.S. replacement axles for all types vehicles, including Army surplus trucks. Write.

THE U. S. AXLE CO., INC.,
POTTSTOWN, PA., U. S. A.

Quiz Answers

(See page 35)

1. False. While American manufacturers were producing 100,000,000 motor vehicles, the other countries of the world, some of which began automotive production before the U. S., were turning out only 24,000,000 vehicles.

2. True. Of the 100,000,000 vehicles produced in America, a total of 21,500,000 units went into export markets.

3. False. There is one vehicle for every 17 persons in Great Britain; one for every 25 in France; one for every 70 in Russia and one for every 222 in the rest of the world.

4. True. Today there are 56 recognized companies in the country marketing 21 makes of cars, 39 makes of trucks and 20 makes of buses.

5. False. It is estimated that 44,000,000 or 44 per cent of these cars and trucks are still in operation, some 5,000,000 being in use in foreign countries.

6. True. Passenger cars generate 1,261,297,000 horsepower or 75.50 per cent while trucks and busses etc. contribute 162,483,000 or 9.70 per cent. The next largest contributor is steam railroads which produce 109,331,000 or 6.56 per cent.

7. True. One of the chemical products made by the engine is water which comes out of the exhaust in the form of vapor and sometimes as water condensed. Enough water is produced to fill a canal 25 feet wide and 6 feet deep extending across the continent from New York to San Francisco.

8. False. There are 6,000,000 horsepower available in Niagara Falls if all of its water were used for power purposes. The estimated consumption of 30,000,000,000 gallon of gasoline for 1949 would be greater than that in 28 Niagara Falls.

9. False. The potential energy in gasoline is much greater than any explosive. It is not unusual to obtain 18 miles per gallon of gasoline but if pure nitroglycerine were substituted, about 3 miles only would be obtained.

10. True. When the vehicle is moving at 70 miles per hour the air rushes through the carburetor venturi at a speed of 250 miles per hour or more. This is almost four times as fast as the vehicle is moving.

When you SPECIFY CUMMINS you get

- **Fast schedules**
- **High average speed**
- **Fuel savings**
- **Low maintenance**
- **Minimum down-time**
- **Long engine life**
- **Warranty—100,000 miles or one year**
- **'Round-the-clock service**

More than 100,000 miles of operation at an average fuel and maintenance cost of only 3.65 cents per mile—that's the outstanding thrift record of one of the 33 Cummins Diesels in the fleet of Owen M. Collett Tank Lines, Salt Lake City, Utah.

This record was made by a Model NHB-600 Cummins Diesel powering a Kenworth truck with full trailer. It carries 6,600-gallon loads of gasoline on a tough run where temperatures vary from 40° above to 40° below zero, and altitudes from 4,000 to 11,000 feet. Payloads average 43,500 pounds, and the gross vehicle weight is 78,000 pounds.

Write for more information about the proved performance and economy of Cummins Diesels.

CUMMINS ENGINE COMPANY, INC., • COLUMBUS, INDIANA

Solutions to Time Out for Play

(See page 22)

Rebus

1. FOREMEN (4 MEN)
2. ECONOMY (EEEK! (ON) OH MY!)
3. GASOLINE (G (AS) O LINE)
4. OVERHAULING ((OVER) HAW L (IN) G)

$125 Headache

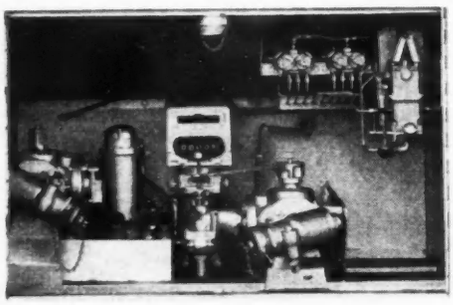
ANSWER: One mechanic has 24 bills (1 one, 2 twos, 18 fives, and 3 tens), and the other has 28 bills (2 ones, 4 twos, 21 fives, and 1 ten).

EXPLANATION: Every dollar bill must be matched by 2 two-dollar bills, and these must be matched by 3 five-dollar bills each. This gives us a basic group (we'll call it group 1) of 1 one, 2 twos, and 9 fives with a total value of $50. Every ten-dollar bill must also be matched by 3 five-dollar bills, and this gives us another basic group (group 2) of 1 ten and 3 fives with a total value of $25. Both mechanics must have at least one of each of these groups in their pay envelopes. This gives them each a remainder of $50 which must be divided in one case as in group 1, and in the other case as in (two groups of) group 2.

ATLANTIC USES S&J
Internal Safety Valves

The Atlantic Refining Company is another of the major marketers of petroleum products who stress SAFETY in all of their operations. They know that there are no short cuts in SAFETY, and in the production, storage, handling and transportation of their products, they go all out for SAFETY.

For years they have used S. & J. Internal Hydraulic Safety Valves in the compartments of their truck tanks. These valves are opened by hydraulic pressure, and in the event of serious accident or fire while discharging, the release of the hydraulic pressure closes the valves automatically. This method represents the maximum SAFETY to the public, to Atlantic equipment, the product, and their personnel. May we send you our catalog on Hydraulic Internal Safety Valves?

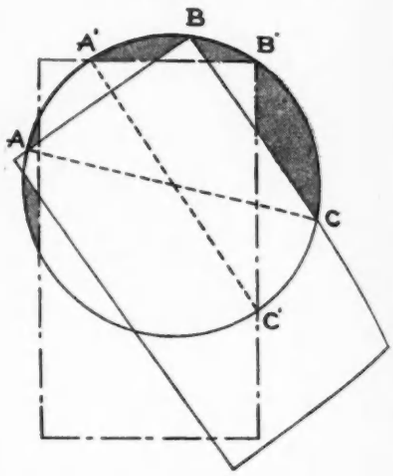


SHAND & JURS CO.
BERKELEY, CALIFORNIA
NEW YORK CHICAGO HOUSTON LOS ANGELES SEATTLE

SHAND & JURS

Middleman Wanted

Take the card and lay it on the disk so that one of the corners (B) touches the circumference, and two of the sides intersect the circumference at A and C.



Mark off A and C on the card with the point of the nail and scratch a light line on the plate from A to C, using the long side of the card as a ruler. Now repeat all these operations with point B on a different part of the circumference. You will then have two diameters intersecting each other. Where they intersect is your middle.

Truck to China

T R U C K
T R *I* C K
C R I C K
C *H* I C K
C H I *N* K
C H I N *A*

Horsepower Words

1. sHaPe
2. HelPer
3. HapPy
4. misHaP
5. HiccuP
6. sHarP
7. HolduP
8. cHeaP

Favorite Word

ANSWER: CraCkerJack

Catty Cora, our office cutie, says she asked her boy friend to accompany her on a shopping trip. He agreed. So she took him to the milliner's; she took him to the furrier's; she took him to the jeweler's; and, eventually, she took him to the cleaner's.

Start getting safer stops!

Exclusive-design drum disperses heat more rapidly, gives more dependable brake action

Linings last longer, brakes work smoother, stops are surer with America's most modern brake drum . . . made by Motor Wheel

Think of it! A brake drum that dissipates heat faster than any you've ever used before. One that gives lower drum and lining temperatures under all degrees of brake application. That's the Centrifuse Brake Drum, made by Motor Wheel Corporation to give you greater safety in every stop!

It's different! A fused iron friction surface absorbs generated heat, passes it out through the welded back of the drum. This exclusive bonded construction, combining lightness of steel with efficiency of cast iron, resists expansion and distortion, minimizes servicing. In fact, Centrifuse considerably lengthens brake assembly operating life!

It re-trues itself. No reboring ever is required. Should accidental grooving occur, new lining on the shoes will automatically smooth and re-true the braking surface without even temporary loss of braking efficiency. And the Centrifuse still is safe, still gives long mileage even should it become heat-checked.

Proved more efficient. This modern brake drum has proved itself as preferred original equipment on new vehicles, and for replacements. It was the drum chosen by the armed forces for twenty-three different types of aircraft used in World War II.

See the Centrifuse before you buy brake drums again! See them at showrooms of distributor members of the National Wheel & Rim Association, most of whom service products of Motor Wheel Corporation.

Stroboscope tells the tale! Test runs in Motor Wheel Corporation laboratories prove that Centrifuse Brake Drums remain efficient under braking conditions that distort ordinary drums.

MOTOR WHEEL CORPORATION, LANSING • • **Manufacturers of Centrifuse Brake Drums and Spoksteel Wheels**

Washington Runaround

Continued from Page 10

definite indication that legislation establishing a new national transportation policy is a long way off.

'47 Census Coming Up

While the census of transportation will not be taken this year, considerable valuable information will be made available to the trucking industry from the 1947 census of manufacturers. Segments of the census, first of its kind to be taken since 1939, have already been released, but the portions relating to trucks will not be ready until later in the year. The census data will show for the first time the number of trucks, g.v.w. classification, and truck-trailers, used by the various manufacturing industries. The data will not include vehicles in common carrier service, distribution or agriculture.

Complete production data on trucks and trailers will also be included in this census, covering such things as total output, dollar value, number of workers, and raw materials consumption.

4000-Mile Oil Change

Oil in the engines of government passenger cars, trucks and buses will be changed only in the spring and fall, or every 4000 miles, whichever comes first, under the terms of a recommendation issued by the Bureau of Federal Supply, the government's central purchasing agency.

Reduced from an original recommendation of 6000 miles, the new standard is expected to save annually an estimated 1,500,000 gal. of lubricating oil valued at $500,000.

It was issued only after exhaustive tests by the Technical Committee on Lubricants and Liquid Fuels showed that "under normal driving conditions and controlled preventive maintenance, oil changes of less than 4000 miles are unnecessary," according to the Bureau announcement.

The Bureau emphasizes to all government agencies that if satisfactory performance is to be attained under the 4000 mile standard, engines must be "maintained in good mechanical condition by a schedule of preventive and corrective maintenance." Use of an efficient oil filter is also recommended.

Synthetic Fuels Backed

Secretary of Interior Krug has announced that in view of the adequately high stocks of petroleum products there is no reason at this time to renew his public appeal of last winter for reduced oil consumption.

Pointing out that supply and demand are too closely balanced for comfort or safety, however, Secretary Krug warns that the United States may continue to be in a precarious position in oil if present strenuous efforts to find and bring into production new sources of liquid fuels, including synthetics, are not vigorously prosecuted.

Legislation to set up a synthetic fuels industry has been reintroduced into Congress. Efforts to push through such a program will be based largely on long term civilian demand as well as national defense needs. The move has White House backing.

END

(Please resume your reading on P. 14)

Each truck in the E. KAHN'S COMPANY FLEET is now dressed up with that NEW SPRING LOOK.

Superimposed on the gleaming finish of these trucks are PALM BROTHERS brilliant decals at work selling "American Beauty" products every minute . . . every day.

Your fleet can stand out from the crowd in the spring parade too—with PALM BROTHERS DECALS insuring perfection of design and permanent color effects.

ACT QUICKLY . . FOR SPRING IS JUST AROUND THE CORNER.

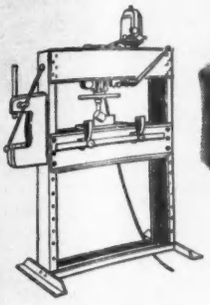
Send For "A MOVING STORY FOR TRUCK OWNERS" TODAY AND GET THE ANSWER WRITE TO DEPT. 94. No charge or obligation.

THE PALM BROTHERS DECALCOMANIA COMPANY

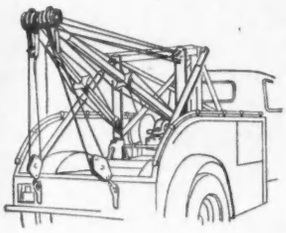
3736 REGENT AVE., CINCINNATI 12, OHIO

OFFICES IN ALL PRINCIPAL CITIES • SEE YOUR 'PHONE BOOK

"I told you we'd have trouble with that new driver from England!"



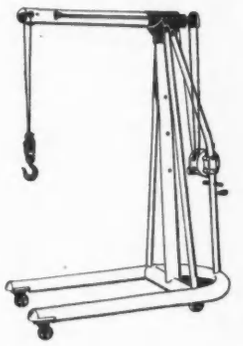
DOING THINGS The MANLEY Way PAYS OFF!

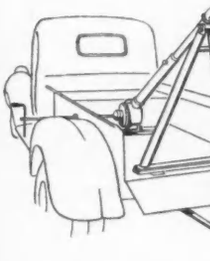


It's amazing what a difference it makes in your shop work to have these Manley "helpers"—when and where you need 'em.

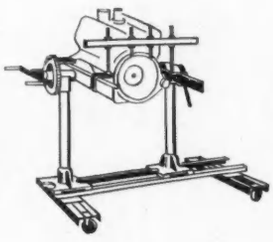
Sometimes you get so used to doing things the hard way you don't realize how much time you waste. Like trying to use a hammer or a vise on a job where you need a Press or an Arbor Press. Or having a man stand around waiting for a jack when he could just as well slip a Trestle under the axle —and use the jack on another job. Or setting up an engine on horses, instead of having an Engine Stand where you can work from one spot and reach every part of the engine—easily.

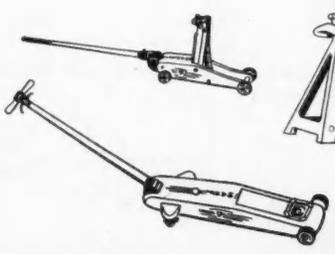
Investment in good Manley equipment pays off —over and over again.

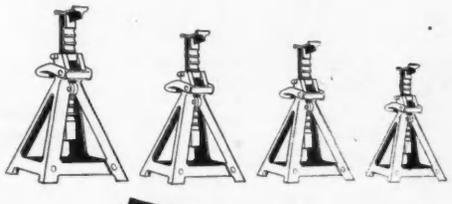




All Manley Automotive Service Equipment is sold through automotive jobbers







ACCO

York, Pa. • Chicago • New York • Portland • San Francisco • Bridgeport, Conn.

MANLEY
Automotive Service
EQUIPMENT

MANLEY DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

Manley Equipment Saves Man Hours

'49 Chevrolet Features . . .

Continued from Page 85

The extension has an additional support bearing at the U-joint front yoke, affording ready replacement of the torque ball socket.

The front (SLA) suspension is entirely new, with coil springs of heavier gage and of slightly higher rate, with direct-acting shock absorbers mounted inside the coil springs. The ride stabilizer is attached to the lower control arms instead of the spring seats. Front tread is reduced to 57 in.

Steering linkage has been changed to provide center-point steering control and incorporates an adjustable drag link connecting the pitman arm to a third arm pivoted at the center of the front suspension cross member. Equal length tie rods connect to the third arm.

Engine Improvements

IN the engine, compression ratio has increased slightly to 6.6 to 1 without change in power output. Flat head intake valves reduced the tendency to ping. New 14 mm spark plugs replace to the 10 mm size and the carburetor has been improved to assure more consistent power delivery by means of a fuel-lubricated accelerator pump. A fast idle mechanism permits proper variation in throttle opening with choke position. Engine front mounts have been changed to reduced tendency to clutch chatter.

The oil filter has been relocated to the top and front of the valve rocker cover. Improved lubrication of timing gears, particularly at low speeds, is effected by positive oil flow and a larger diameter outlet nozzle. Tooth wear on the flywheel ring gear has been reduced by eliminating gear tooth chamfer.

A major change in the electrical system is the adoption of a positive shift solenoid starter actuated by a push button on the instrument panel. The starter functions with ignition off or on. The previous polarity reversing switch has been replaced by a single coil to the distributor lead and the distributor simplified by replacing the insulated plate with an internally grounded breaker plate.

To take care of the forward shifting of weight, the front braking effort has been increased suitably by increasing the diameter of front wheel cylinder by 1/16 to 1 5/16 in. while the rear wheel brake cylinders are reduced by 1/16 to 1⅛ in. The parking brake is operated by an L-shaped pull handle mounted below the instrument panel to the right of the steering column with the handle closer to the driver. Improved linkage reduces the force required to apply the brake.

Super balloon, low pressure tires, 6.70 x 15-4-ply are standard equipment and are mounted on 15 x 5K rims.

END

(Please resume your reading on P. 86)

Put Your Money on the Thermoid Line

Built for Heavy Duty Service

Thermoid Radiator Hose has proven to be better where it counts —on the road, under the toughest conditions. Precision made with Multi-Ply wrap, Thermoid Radiator Hose is impervious to hot water and anti-freeze. It lasts longer and lowers maintenance costs. Start saving money now by using Thermoid Radiator Hose on *all* your equipment.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

Trucks "Sell as Well as Deliver" after being refinished in a DEVILBISS Complete Paint Shop

The fully equipped DeVilbiss Paint Shop provides a better way to give trucks, tractors and trailers that brand-new look.

It's DeVilbiss designed throughout, including Spray Booth, Exhaust Fan, Fluorescent Lighting and Air Compressor. The assortment of spray equipment handles painting of all kinds including underbody coating, doing it faster and better. No wonder repainting costs go down—quality goes up—and trucks and cars are back on the road "Selling as Well as Delivering" with no paint shop delays.

Keep your fleet looking new and make it last longer. Ask for details on Complete Paint Shops that will really save you time and money.

THE DEVILBISS COMPANY • Toledo 1, Ohio
Canadian Plant: WINDSOR, ONTARIO

DE VILBISS

means **Quality** *in all four . .*

SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

SAE Annual Meeting

Economy, Efficiency and

THE ANNUAL MEETING of the Society of Automotive Engineers, Jan. 10 through 14 at Detroit, covered a comprehensive review of developments in the entire field of automotive engineering. More than 3000 engineers from all sections of the country attended daily discussions held at the Book-Cadillac Hotel. Paul G. Hoffman, Administrator, Economic Cooperation Administration, spoke at the annual dinner on Wednesday on "Recovery—the Road to Peace." Robert F. Black, of White Motor Co. was toastmaster.

The SAE Horning Memorial Medal for outstanding contribution to the science of mutual adaptation of engines and fuels was presented to A. C. Pilger, Jr., of Tide Water Associated Oil Co., at the afternoon session on Thursday.

C. G. Seashore, of Pennsylvania State College, State College, Pa., presented a paper on the problem of designing truck cabs to assure the utmost in comfort and safety, the minimum of convenience and fatigue, for drivers of varying sizes, weights and heights. He emphasized the need for better windshield wipers, improved visbility and adjustable seats to minimize driver fatigue. He called for better instruments, improved cab ventilation and better fire protection.

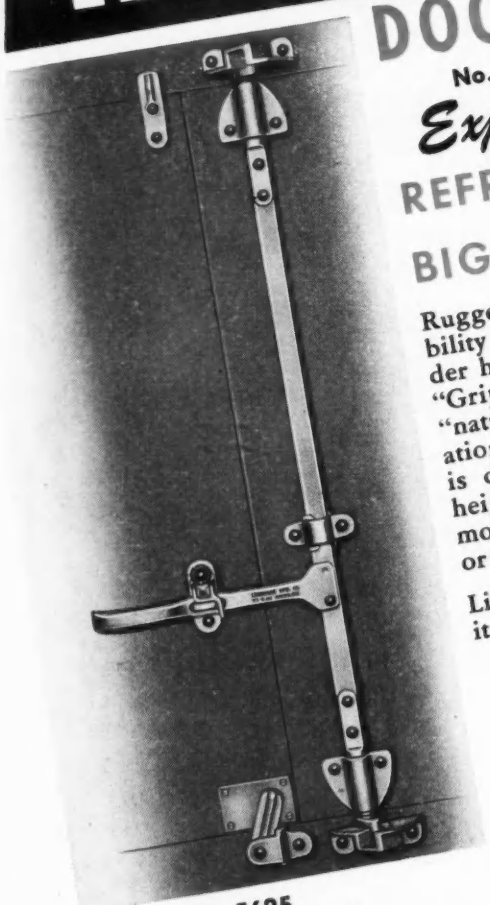
Multi-ratio gearing in heavy motor vehicles may be achieved effectively through the two-speed axle or auxiliary transmission, said Austin M. Wolf, consulting engineer of New

AND NOW the NEW

EBER-GRIP-HARD DOOR LOCK

No. 5625 & 5625X

Expressly for REFRIGERATION AND BIG VAN BODIES



Ruggedly constructed for durability with long service life under hard usage, the new Eber-"Grip"-Hard Door Lock is a "natural" for use on Refrigeration and Big Van Bodies and is designed for various door heights and thicknesses. This model is easily installed at right or left on single or double doors.

Liberal bearing surfaces facilitate easy operation and leverage in lock action assures complete door closure and a ready breaking of frost seal upon opening.

A special acting padlock eye affords a double locking effect.

WRITE FOR ADDITIONAL INFORMATION

No. 5625
(RIGHT HAND MOUNTING)

EBERHARD Long Run TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Company • CLEVELAND, O.

EARS TO THE GROUND

Although some of the larger motor truck manufacturers have announced postwar models, the real postwar product—representing sweeping changes and improvements both in mechanical design and styling—has been long delayed. We learned at the SAE Annual Meeting confidentially of course, that at least two big producers will show their string of new models before this summer.

. . . Don't discount the talk last year about real big engines and big trucks in the offing. One custom builder told us they are studying truck models of giant size for northwest logging operations. Some idea of their thinking may be gained from the statement that they may use engines from 700 to 1000 hp. It may come as a surprise but they say that components for a vehicle of this kind are available commercially. That is, all except for gear boxes.

. . . Speaking of big engines, one of the diesel manufacturers is said to be ready to talk about a 400-hp V-8 job for truck use.

Safety Merit Attention

York. He emphasized that the devices were not competitive since each meets a particular need, the type used depending upon operating requirements and economics. Mr. Wolf explained that when reduction ratios overlap, two-speed axles are lower in cost, faster in performance, more economical to operate. Auxiliary transmissions are needed when larger gear reductions become mandatory.

In an informal discussion following papers on relative merits of diesel and gasoline engines (see page 67), Warren A. Taussig, of Burlington Truck Lines, Galesburg, Ill., made the following observations: Diesel vehicles showed appreciably better fuel mileage. More sustained power was available for heavy hauling on hills. Over long distances, diesel-equipped vehicles had proved more economical in his operation. However, he stated that his company was waiting for a tailor-made diesel engine built to handle his particular loads and schedules.

Jack Snead, of Pacific Intermountain Express, confirmed the former report that diesel vehicles developed slightly more power at high altitudes.

Merrill C. Horine, of Mack Mfg. Corp., advanced the point that operators should consider the size of their fleets in making a choice of power plants. He frankly stated that diesel vehicles were not adaptable to the smaller fleet due to the fact the diesels require precision maintenance.

W. S. James, of the Fram Corp. reported in his paper that rising fuel costs already inflated by taxation to approximately one third of the total expense of motor vehicle operation, necessitated an improvement in vehicle operating miles per gallon. Pointing out that annual consumption of gasoline approximates 38 billion gallons, he said that even a one per cent increase in miles per gallon would represent savings of $90,000,000 a year.

AT THE SAE

This company also is reported to be able to make available engines of over 700-hp for truck use, if need be. Hercules showed its DNX-V8 diesel at the SAE Show, a job rated over 300-hp at 2100 rpm.

. . . Boeing's 200-hp gas turbine is in laboratory stage. Nothing is known about cost, although it is hinted that it should be made ultimately at less cost than a reciprocating engine. That remains to be seen. On the plus side, however, the Boeing gas turbine weighs only 150 lb. This includes a built-in gear reducer with an output shaft running at 2500 rpm when the power turbine turns over at 26,000. One hitch at present is fuel consumption. It is said to have a specific fuel consumption ranging from 5 to 1 lb per bhp hr. The top limit is at least double that of a commercial gasoline engine. They can improve economy by adding a regenerator but that would increase both cost and weight at the same time. In any event the gas turbine is to be reckoned with in the future.

We Clean a truck in 20 minutes with
HYPRESSURE Jenny
It used to take one man half a day to do it by hand."
SERVICE DIVISION
KI 6161
Full Powered Heavy-Duty All-Purpose Models from $445 to $595

Everywhere, profit-minded truck and bus owners, like the one quoted above, are using Hypressure Jenny to cut cleaning and repair time on motors, chassis, parts, etc. They are reducing lay-up time as much as 40% by Hypressure Jenny steam cleaning their trucks before their mechanics start working on them. Besides saving labor they are getting equipment back on the road in practically half the time.

Hypressure Jenny steam cleaning increases pay loads by removing road dirt that often adds as much as 400 lbs. to the load . . . exposes broken or worn parts for repair before road failures occur . . . reduces fire hazards. Hypressure Jenny cleans floors, grease racks, pits, tools, walls, windows, etc., etc., 8 to 10 times faster than by hand cleaning methods.

Hypressure Jenny will do it for you too. Let us prove it.

Mail the coupon today.

MAIL TODAY!
We'll make a FREE SURVEY of your cleaning requirements and estimate the savings you can effect with Hypressure Jenny Steam Cleaner. No obligation.

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
Serving Since 1892

REQUEST FOR SURVEY

Hypressure Jenny Division
Homestead Valve Manufacturing Co., P.O. Box 90-B, Coraopolis, Pa.
We employ ..... mechanics on repair work.
We overhaul or recondition . . . ☐ cars, ☐ trucks, ☐ buses each month.
We paint . . . ☐ cars, ☐ trucks, ☐ buses each month.
We're interested in cleaning ☐ floors, ☐ walls, ☐ windows, ...
We wash approximately . . . ☐ cars, ☐ trucks, ☐ buses each month.
Based on above facts, please show us the savings or extra profit HYPRESSURE JENNY can produce.

Company.....
By.....Title.....
Address.....
City.....State.....

DELCO SUPER 11
HEAVY DUTY BRAKE FLUID

Insures Safe, Smooth Stops for Trucks and Buses!

Delco Super 11 has passed the test of years of use under the most trying conditions. Tested by almost impossible roads, heavy loads and every type of weather, both during and since the war, Delco Super 11 has proved to be the solution to today's most severe, heavy duty braking needs.

Delco Super 11 maintains its full efficiency from the Tropics to the Arctic. At temperatures as high as 325°, Delco Super 11 stays vapor free. At 60° below zero it is still smooth and free flowing.

Pistons and cylinders stay free from gumming and corrosion. Rubber parts are protected . . . will not rot or swell. Delco Super 11 meets every specification for heavy duty brake fluid as set down by S.A.E. and U.S. Army Specification 2-111. Your brake system will be protected . . . your trucks and buses will give the best braking performance with Delco Super 11.

DELCO SUPER 9 BRAKE FLUID

Many years of use on passenger cars and light trucks have proved Delco Super 9 far superior to ordinary fluids . . . proved it to be exceptionally long-lasting and efficient.

UNITED SERVICE MOTORS

DELCO BRAKE—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

MORAINE PRODUCTS
DIVISION OF GENERAL MOTORS

Delco SUPER 9 AND SUPER 11 BRAKE FLUID • DECLENE • BRAKE PARTS
STANDARD FOR EQUIPMENT • THE STANDARD FOR REPLACEMENT

Now! The fan belts you need—backed by the service you want—in American Brakeblok's

American Brakeblok's '49 line is NEW! It's substantially *broader* . . . includes 89 new numbers in all—35 for heavy-duty use, 54 for both cars and trucks. And it's "*Perma-Sized*"... every belt engineered to maintain proper tension and wear longer, with fewer adjustments.

This broad American Brakeblok line gives you the right belt and the right fit for every standard unit in your fleet. Best of all, it's available from the one source where *service* is always prompt, always efficient—your NAPA Jobber. Call him! Get the full details on the new line for '49, and its advantages for you.

Don't Forget Radiator Hose: American Brakeblok's hose line is broader, too. Includes a full range of standard and heavy-duty hose, plus necessary formed numbers.

American Brakeblok
REG. U. S. PAT. OFF.
Fan Belts and Radiator Hose

NAPA Insured Quality

American Brakeblok fan belts and radiator hose are available through NAPA Jobbers everywhere.

AMERICAN Brake Shoe COMPANY

AMERICAN BRAKEBLOK DIVISION
DETROIT 9, MICHIGAN

5 "W's" on 5-W Oil

Continued from Page 73

motive and refinery engineers exchanged notes on the results of this test and an all-important meeting was held in Toronto on August 20, 1948, under the auspices of the Canadian Automobile Chamber of Commerce. This meeting, responsible for the current ground rules, was a cooperative session bringing together representatives of the major oil companies as well as of the following automotive manufacturers:

Chrysler Corp. (U. S. and Canada), Ford Motor Co. (U. S. and Canada), General Motors (U. S. and Canada), International Harvester (Canada), Reo (Canada), The Studebaker Corp. (U. S.), and The White Motor Co. (Canada).

The meeting was responsible for the current ground rules which encouraged other oil companies to bring out a 5-W oil and prompted its marketing this winter throughout the entire sub-zero snow belt in the U. S. and Canada. Generally speaking, this sub-zero area in the U. S. comprises Maine, New Hampshire, Vermont, Northern New York, Upper Michigan Peninsula, Wisconsin, Minnesota, Montana, North and South Dakota.

Summary of 5-W Status

SUMMARIZING the present situation, it is important to note the following:

5-W oil is not a substitute for 10-W but for 10-W and 10 per cent kerosene mixtures, and then only where the minimum anticipated temperatures are below —10 deg. F.

The 5-W grade has no official standing as an automotive designation. It is not an SAE grade. Committee action has been started which should lead to an SAE specification.

The 5-W oil is intended primarily for passenger cars.

As an aid to cold starting the usefulness of 5-W has been definitely established.

Due to limited service information, driving at moderate speeds is desirable. The degree of protection afforded by such oil under hard driving conditions has not been completely proved.

Higher oil consumption is to be expected than with 10-W and 20-W

(TURN TO PAGE 160, PLEASE)

The new one is worth MONEY to you!

The old one is worth MONEY to you!

INSTALL THIS DRIVE

RETURN THE OLD ONE IN THIS BOX

When you replace with a genuine Bendix* Drive, you get a double return in money. Your customer pays you cash, of course, for the installation of the finest drive you can sell him. Furthermore, the old one is worth money to you when you return it to your Bendix Drive Central Distributor.

The old Bendix Drives are scrapped—That is your assurance that the Bendix Drive you sell is brand new and thoroughly efficient. *Always* replace with the genuine Bendix Drive.

*TRADE MARK

THEY'RE WORTH MONEY!

Genuine Parts give Genuine Service

Bendix Drive

ECLIPSE MACHINE DIVISION of ELMIRA, N. Y.

Bendix AVIATION CORPORATION

"You go back and tell your outfit I don't care for their subtle hints about how long it takes to get their trucks unloaded here."

FORMING A TRUCK OR TRAILER FRAME

The Parish Way

In the above illustration the powerful press is shown forming PARISH PRESSED STEEL FRAMES. It has a capacity of 3000 tons and can form side rails from alloy steel 3/8" thick, 380" long.

This operation, plus the design and heat-treating, is what gives *PARISH* Frames their "spring-back" quality which is responsible for their long life and economical operation.

Because of the resilience of *PARISH* Heat-treated Frames, the parts attached to them are held in correct relation to each other in spite of stresses and strains caused by road conditions and heavy loads, and "spring-back" immediately to their original position. Their strength value is 125% greater than steel commonly used.

Be sure to specify *PARISH* Pressed Steel Heat-treated Frames for the new trucks you buy and for replacements. Insure yourself longer trouble-free operation by specifying the frame with the "spring-back."

PARISH
Heat-Treated Frame

The Keel of the Chassis

Pressed Steel Heat-treated Frames for Trucks and Tractors

PARISH PRESSED STEEL CO. *Subsidiary of* **DANA CORP.**
READING, PA.

Western Representative: F. Somers Peterson, 57 California St., San Francisco, Cal.

5 "W's" on 5-W Oil

Continued from Page 158

oils because the 5-W is lighter in body.

Because of the higher consumption, oil level should be checked more frequently.

Dilution of 5-W oil with kerosene or with other diluents, as is the practice with 10-W to secure better starting, is not recommended.

Caution For Truck Users

IT IS anticipated that if 5-D were used in truck engines, particularly in heavy-duty vehicles, oil consumption might be too high for safe operation under certain conditions.

Although there is general agreement among passenger car producers that 5-W oil will not be harmful to the engine, some engineers are inclined to take a more conservative view. They want a look at the record developed during the present winter before passing judgment. (At least one heavy-duty truck producer is on record, for the time being, as not recommending 5-W oil in its line of vehicles.) Test data up to now indicate that on passenger cars, at least, no unusual engine wear is to be anticipated.

Some of the Marketers

FOLLOWING is a partial list of companies who distribute their own 5-W, of record some time before this article went to press:

In the U. S. A. (areas listed earlier)

Valvoline	Quaker State
Socony-Vacuum	Standard of New Jersey
Kendall	Sun Oil (will supply on demand)
W. H. Barber	
Tidewater	

In Canada

Valvoline	Kendall
Wakefield	Sun Oil (will supply on demand)
Imperial Oil	Quaker State
Tidewater	British-American

While this listing admittedly is incomplete, it does give the major brands known at the writing. It is of interest that Standard of Indiana will distribute Quaker State 5-W in the northern sections of its marketing area.

At the moment one of the major oil companies has elected not to market 5-W until its own test work has proved the commercial acceptability of the new lubricant. This company made some tests last winter with results that raised a question mark in its thinking.

Discrimination Warranted

MENTION was made earlier that one desirable requirement of 5-W lube is a high VI. As might be expected, one or more of the oils marketed this winter do not meet this requirement. That implies the need for discrimination on the part of users.

Still another oil producer—who, incidentally, is said to have an excellent product of high VI—has issued literature recommending the use of his 5-W not only for passenger cars but for trucks and tractors as well.

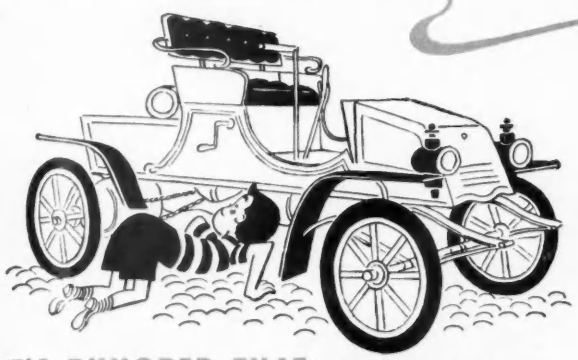
Will the new evidence to be presented in a few months bear out this producer's views on the acceptability of 5-W in trucks and in heavy-duty engines? It remains to be seen.

END

(Please resume your reading on P. 74)

What's in a NAME...?
HANSEN
Farrell BUILT FIRST TO LAST
SUPERIOR
INTERNATIONAL
WENTWIN PRODUCTS MANUFACTURERS
TRAILMOBILE
WOOD HYDRAULIC
HEIL
HANSEN HARDWARE for Commercial Bodies
Built into Bodies Means-
STURDINESS...DEPENDABILITY...DURABILITY
HANSEN—a name that means the best in hardware for commercial bodies—has long been preferred and used by such leading companies as listed in the panel at the left.
Any body builder, designer or fleet owner knows that Hansen Hardware can be relied upon to give the utmost in dependable service — often outlasting the body on which installed.
Sturdiness, dependability, durability form a built-in part of every Hansen Lock, Regulator, Hinge or Handle. Simple in design —easy to apply—rugged—you can depend upon Hansen.
HANSEN
5043 RAVENSWOOD AVE. . . . CHICAGO 40, ILL.

THE DOCTOR OF MOTORS Rumor Page



IT'S RUMORED THAT: ***The downdraft carburetor and automatic spark advance were used as early as 1902!***

That's a fact. The 1902 chain-drive, rear-engine Rambler had these innovations incorporated in its first model. The Rambler was succeeded by the Jeffrey, and the name was later changed to Nash! There the name changes stopped. It's been Nash since 1917.

*Contributed by Ralph R. Weeks, Upper Darby, Pa.**

IT'S RUMORED THAT: ***Salt treated tire treads have been developed for icy roads!***

That's right. The manufacturer claims that up to 30% better traction is developed by a new rock-salt treated tread. The process is intended for recapping purposes rather than for new tires. It is hoped that the result will be safer driving under winter conditions, although it is not designed to replace skid chains.

IT'S RUMORED THAT: ***Other fleet operators are on to a good thing!***

Yes, we're talking about the Perfect Circle Fleet Survey Plan. It's a plan, available at no cost or obligation to you, that has enabled hundreds of fleet operators to cut maintenance time, build up profits. No truck or bus can earn anything while it's in the shop, and this plan has proved itself when it comes to cutting shop time. Interested?

IT'S RUMORED THAT: ***In Akron, they are testing a "rubber street"!***

Yes, it's true. Shreds of synthetic rubber are mixed with asphalt blacktop and the resultant "hot-mix" applied to the street. Experimenters claim that the new surface is more waterproof and resilient, hence less likely to crack under freezing conditions, and that it also wears better. For purposes of the test, one-half the street is paved with the new mix and the other with regular asphalt. Mighty snappy!

*Perfect Circle pays $50.00 for any Rumor accepted for this page. None can be returned or acknowledged, and all become PC's property. Send yours to Perfect Circle Corporation, Hagerstown 6, Indiana.

Old Gray Mill Ain't What It Used to Be

Continued from Page 79

tralizing operations. One holds three engine blocks in such manner that line production methods may be followed. For instance, one engine can be in process of disassembly, while another is having the cylinder block rebored, new bearings installed and line bored in crankcase and the third engine is undergoing assembly. As each operation is finished the block can be moved easily by means of the overhead crane to the next position and finally to the dynamometer stand.

The second table, separated from the engine overhaul stands only by an aisle provides convenient location for and quick access to the con rod line boring equipment, valve refacer, pin reamer, rod aligner, bench grinder, cylinder boring bar, cylinder bore, main and camshaft—line boring equipment and a ¾-in. drive air wrench.

Other Areas

THE terminal area needs little comment except to say that despite numerous posts throughout the area, there is plenty of room to handle the largest tractor trailer rigs at all three sides of the dock. There is also plenty of room for inside storage of all tractors around the outer walls. The two large sliding doors provide easy access to and from the parking lot and public streets. The section marked trailer repairs is really an overflow from the general repair shop and is used for major trailer rebuilding.

The large area at the eastern end of the building (Drawing 1) is used largely for storage of salvageable heavy equipment such as old engine blocks, axles, frames, etc. Although most of it is ready for the junk man, we hang on to perhaps more than normal inventory because we often find that a critical part is there for the taking when needed.

At the upper left corner of this area, there is a blacksmith shop containing a forge, anvil and other equipment for ready handling of metal fabrication. We do all our own body work as well as major tractor and trailer overhauls, making up many parts we cannot buy. In this section we have devised a number of standard items, such as a V-shape bumper which fits between the frame members at the rear and mounts low enough to prevent passenger cars from "going under." We also have a standardized frame of our own design for mounting license plates and turn signals between the low bumper and the rear frame member where they are well protected but clearly visible.

The large spaces reserved for storage of new tires and gasoline and oils permits us to buy these products in carload lots thus realizing substantial savings in our costs.

In the paint shop are the usual array of spray guns, plus a powerful exhaust fan and explosion proof lighting fixtures and eight heating

(TURN TO PAGE 166, PLEASE)

STREAMLINED SERVICE

WITH JOYCE SHOPMASTER 2-POST LIFTS

Streamlined maintenance and repair service in your shop means more productive hours on the road for your mobile equipment. Speed your maintenance and repair operations by installing a Joyce Shopmaster 2-Post Lift in each mechanic's stall. Maximum accessibility to underparts of vehicle are provided by the superstructure design and strategic location of the lift posts. Completely flush-floor installation when lift is either up or down is available. Quick spotting of vehicles is made easy by self-centering front axle support and special rear axle support positioning rod.

Five Shopmaster 2-Post models can be furnished for passenger car and light truck use, either compressed air (150 p.s.i.) or electric operation. Wheelbase on all models range from 97″ to 167″.

Have top production from each mechanic in your shop! Install Joyce Shopmaster 2-Post Lifts.

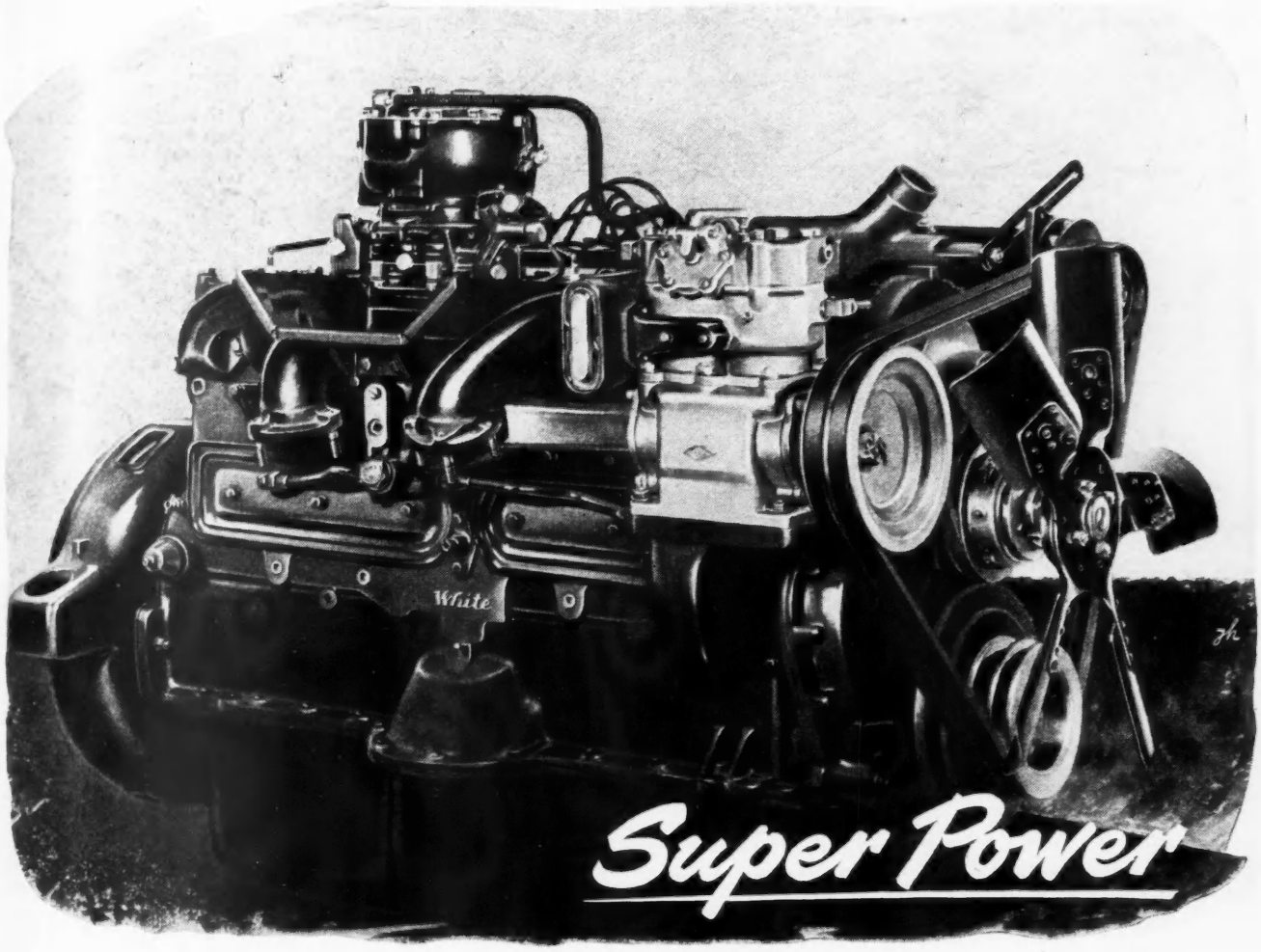
WRITE FOR BULLETIN 205-L FOR INFORMATION ON THE 5 MODELS OF JOYCE SHOPMASTER LIFTS

IN CANADA: Midland Foundry & Machine Co., Ltd., Midland, Ont.

- SINGLE-POST AUTO LIFTS
- SHOPMASTER 2-POST LIFT
- BUS & TRUCK 2-POST LIFTS
- LIFTMASTER HYDRAULIC JACKS
- "FREE WHEELER" LUBE JACKS
- HOLD-A-CAR CHASSIS STANDS

THE JOYCE-CRIDLAND CO. • DAYTON 3, OHIO

THIS IS THE BIG DIFFERENCE IN TRUCK EARNING POWER



THE ENGINE is the heart of the motor truck's earning power. It has to be better than all other automotive power plants... more rugged, more powerful... able to operate *continuously* under full load. You do not need this kind of power and stamina in your passenger car, but in the cost of operating your trucks ... in their dependability, long life and *earning power* ... it makes all the difference in the world. That's why White Super Power, correctly applied to your business, always earns more, costs less.

THE WHITE MOTOR COMPANY • *Cleveland, Ohio*

The White Motor Company of Canada Limited • Factory at Montreal

FOR MORE THAN 45 YEARS THE GREATEST NAME IN TRUCKS

Old Gray Mill

Continued from Page 164

lamps for quick drying. Hemingway was one of the first in New England to use "Scotchlite" reflective coatings and we find them very effective for signwork and rear end protective designs.

Between each major section of the building are metal hand fire doors.

PHOTO 7. Tire control board in central stock room shows what sizes are on hand at each terminal or contract shop

Throughout all areas built-in sprinkler systems, plus portable hand extinguishers, give adequate protection.

Lighting

IN all working areas—the general repair shop, stock room, tire shop and unit overhaul shop—100-watt fluorescent tubes, plus ceiling drop lights over all work brenches and machines, provide adequate lighting. Overhead drop lights of conventional design are used in the terminal area with a concentration of one every 12 ft. over the loading dock. In addition, a number of mechanic-type extension cords are provided at the dock for checking loads inside the trailers.

Vital Statistics

THE Hemingway fleet at the moment consists of 102 tractors, 180 trailers and 25 straight trucks. It serves all of the New England states, New York City and the northern New Jersey industrial area with a terminal in Paterson. In addition to the headquarters shop, there are small maintenance shops at Boston and Provi-

(TURN TO PAGE 168, PLEASE)

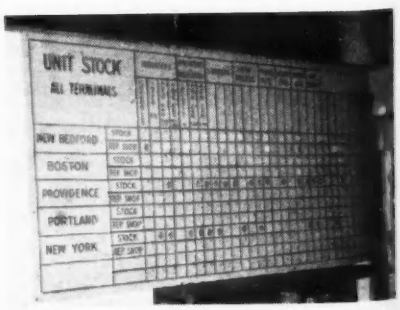


PHOTO 8. Stock control board shows rebuilt small units at each company shop

Send for your Copy Today!

Send for catalog 22 B 1 covering the "Cleveland" stock line of Truck Body Forgings . . . or catalog 18A covering "Cleveland" Automobile Forgings.

"Cleveland" Irons, including Door Locks and Door Checks, are called upon to perform the hard job on bodies . . . subjected to constant rough wear over every type of road. Down through the years they've succeeded because we've never ceased to improve them.

No. 2385
The Wedge
DORLOK

Provided for medium sized bodies. Easy action, rattle-proof. Keeps doors tight always. For Right and Left Hand Doors—2 and 3-way.

The Name "Cleveland" is Forged On All "Cleveland" Drop Forged Body Irons.

No. 2392-A
Heavy Pattern Cadmium Plated Lock

Made with heavy, round adjustable rods. A durable spring prevents road shock from jarring lock open.

• "Cleveland" Die Castings from Zinc or Aluminum are made to Special Blue Print.

The Cleveland Hardware & Forging *Co.*
Established 1881
3264 East 79th St. Cleveland 4, Ohio

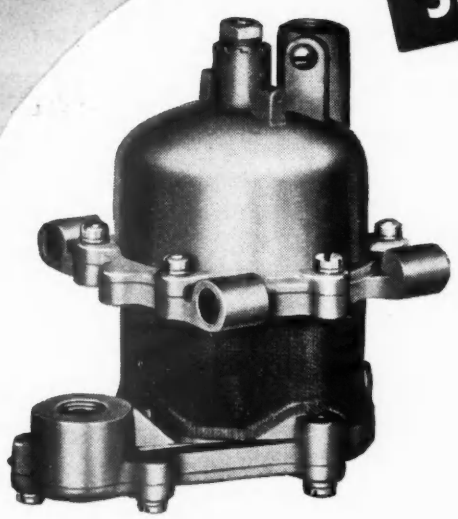
the CARTER Electric Pusher Pump
is now available in Safety Tanks made by

American Safety Tank Co.

Michigan Fleet Equipment Co.

Prior Products, Inc.

Snyder Tank Corp.



CARBURETER
TRADE MARK REG. U. S. PAT. OFF. MARCA REGISTRADA

For quick, easy installation, truck owners may now buy safety tanks from these major tank manufacturers whose tanks are designed to receive the Carter Electric Pusher Pump.

Long known as the pump that stops vapor lock, the Carter Electric Pusher Pump is used as standard equipment on most leading gasoline powered buses and on thousands of trucks throughout the country.

STOP VAPOR LOCK • CUT MAINTENANCE COSTS • REDUCE ROAD FAILURES

CARTER CARBURETOR CORPORATION
Saint Louis 7, Missouri
Division of American Car and Foundry Company

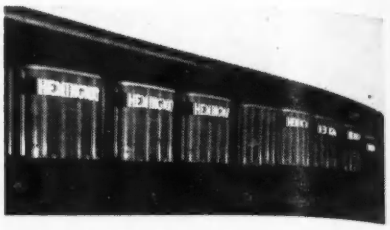
CC-648

Old Gray Mill

Continued from Page 166

dence with four and seven mechanics respectively. These handle all preventive maintenance for trucks assigned to their locations and minor repairs up to and including engine changes which are then shipped to New Bedford for overhaul. There is also one mechanic each assigned to the New York City and Portland, Me. terminals for the handling of minor repairs. All major body work and painting is done at New Bedford. In addition, we have a service contract with commercial repair shops along all our routes at intervals of not more than 50 miles.

Personnel at the headquarters shop, in addition to myself, consists of foreman, 23 mechanics of various grades and specialties, a tire man, 2 painters, a stock room clerk and 2 girls to handle records.



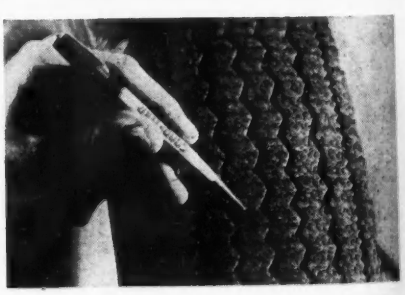
TWILIGHT photo shows effectiveness of Scotchlite lettering on new trailers

With our equipment and personnel, we are able to meet practically every fleet need except retreading and major tire repairs, and crankshaft grinding. In addition to regular work, our personnel have developed a number of special procedures, one of which is illustrated in the Shop Hint section of this issue (see page 74). By the use of the tow bar arrangement shown there we have eliminated completely the need for a wrecking truck. Should a truck be wrecked or broken down beyond repair on the highway, we tow it (regardless of its location) to the headquarters shop, using any convenient tractor.

END

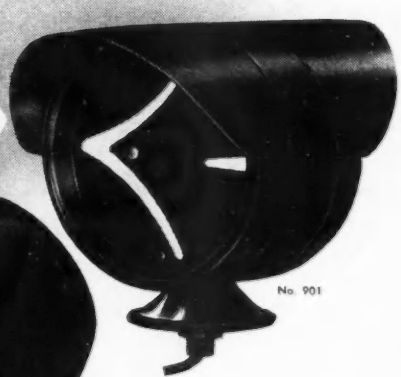
(Please resume your reading on P. 80)

Tire Tattooer



Latest development for increasing tire traction on icy roads is Goodyear's "tractionizing" process. The 75-lb machine (upper photo) tattoos thousands of tiny rough-edged holes in the tread of a conventional tire. Holes pierce only the top part of the tread—just enough to retain effectiveness for winter driving of the average motorist. It is said that mileage loss is extremely small

DRIVERS LIKE 'EM!



TRADE MARK YANKEE REG. U.S. PAT. OFF. Approved

because...

YANKEE DIRECTIONAL SIGNALS eliminate all left or right turn guesswork . . . reduce the danger of hazardous traffic driving. They permit the driver to keep both hands on the wheel at all times . . . to keep his eyes always on the road ahead! Drivers know their trip records show safer hauls 'cause it's easier, faster, safer driving when YANKEE points the way!

DIRECTIONAL SIGNALS

Adjustable fingertip control switch with pilot light.

YANKEE *Approved* Directional Signals are furnished in sets of 2 or 4, single or double-faced, complete with switch and liberal wire leads.

*Approved for legal sale in all States requiring approval.

Write for illustrated catalog.

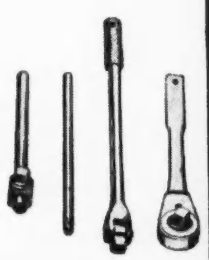
Fleet owners prefer 'em because...

they know they can depend on YANKEE DIRECTIONAL SIGNALS to keep fleet units rolling consistently . . . to make schedules faster, and to reduce per mile operating cost! They know that YANKEE means greater driving ease and *safety* . . . less replacements. Yes, there are reasons a-plenty why owners and drivers both specify YANKEE every time!

YOU'RE SAFER WHEN YOU'RE SEEN WITH YANKEE

YANKEE METAL PRODUCTS CORP., Norwalk, Conn., U.S.A.

Those who like their tough jobs made easy... are buying—



NONE BETTER

These Hand Tools earn their name—NONE BETTER! . . . the quality Line that gives you *value* for your Hand Tool dollar. Every Tool is planned to bring you maximum utility. Every piece of tough alloy steel is checked until your margin of working safety is wide and sure. You'll like NONE BETTER's bright, triple-plated, Chrome Finish. You'll go for that keen NONE BETTER design . . . it packs plenty of power in each lightweight, easy-handling Drive Part and Wrench. And how you'll marvel at famous NONE BETTER durability . . . these Tools can really take it and come back for plenty more—for years!

JOB-MASTER PERFORMANCE

NONE BETTER quality rolls up its sleeves and proves itself on the job. These compact Hand Tools flash through the toughest assignments. They're *right* for reach . . . *right* for turning power. You'll want them in balanced Sets like that 40-piece Socket & Drive Part Set shown above. It's the economical way to buy these money-making Hand Tools.

GUARANTEED

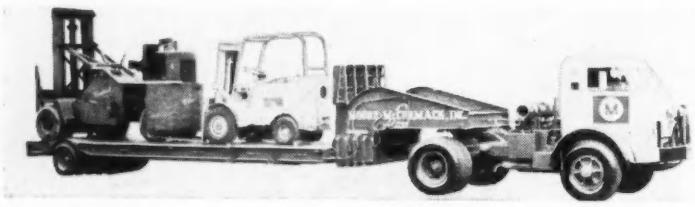
NONE BETTER Hand Tools are fully guaranteed. Write TODAY for the name and address of your nearby NONE BETTER Jobber . . . he's the man to see for real Hand Tool value!

●

NONE BETTER HAND TOOL DIVISION
The New Britain Machine Company
New Britain, Conn.

Chadwick Two-piece

The Chadwick 20-ton two-piece low-bed trailer ready to unload. It is 36 ft long, 8 ft wide, has eight tires

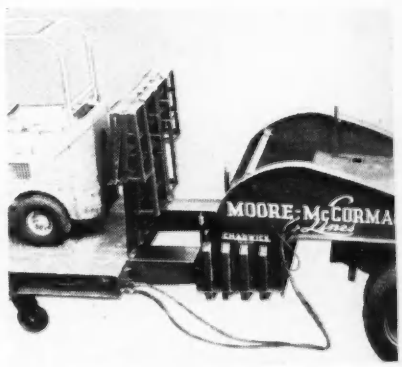


A NEW TYPE of self-loading and unloading low-bed trailer has been developed by Chadwick, Inc., Darby, Pa., manufacturer of special-purpose truck bodies and trailers. Its most outstanding feature is its two-piece construction and two-piece folding ramp designed to accommodate fork-lift trucks and similar low-slung units used for loading and unloading.

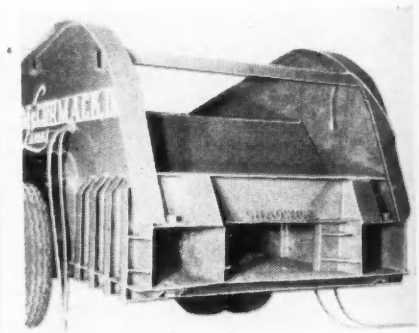
The two-piece construction is achieved by unique dual, rigid tongue couplers just aft of the gooseneck.

The loading and unloading operations are accomplished by dropping two hydraulically-controlled landing gears, to support the load, removing two unlocking pins, and pulling the trailer sections apart by driving the tractor with the gooseneck section away.

After the tractor and fore section of the trailer are removed, the landing gear is retracted. This brings the trailer bed to within 9½ in. from the



The two sections of the low-bed trailer are shown separated. Driver will retract landing gear before uncoupling snap-on pneumatic and hydraulic lines

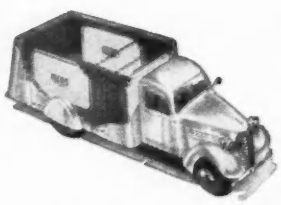


Close-up of rear of gooseneck showing boxed channels for tongue couplers, and all-welded construction of vertical and horizontal stress reinforcement

KOLD-HOLD
TRUCK PLATES

KEEP THE SELLING FLAVOR RIGHT!

Flavor . . . rich, delicious and protected . . . is what makes customers come back for more. Whether it's meat, milk, ice cream or frozen foods, overheating of perishables robs flavor and vitamins and often causes actual product loss.



Here is where Kold-Hold "Hold-Over" truck plates fit into the picture. These plates hold the truck at the desired temperature — and do it even on delivery service where the truck doors are frequently opened. What's more, the overall cost of operating with "Hold-Over" plates is lower than with dry or sweet ice — ordinarily less than 10c a day.

Kold-Hold "Hold-Over" plates provide numerous other advantages. Greater payload, because the plates take up less room. Greater safety, because of the streamline design and rigid testing. Truck bodies are always clean, dry and sweet. Handling costs are lowered, because the partially loaded trucks need not be unloaded at night. When hooked into the central compressor, which recharges the entire fleet, they act as holding rooms. For trucks that make two day runs, a small compressor may be mounted directly on the truck and plugged in at night to any 110V outlet. Write for complete information today.

New Package Truck Unit Answers Some Hi-Temperature Problems . Write for Data!

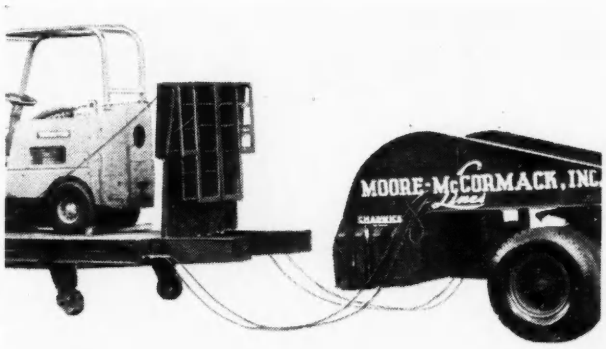
KOLD-HOLD

Jobbers in Principal Cities

PROCESSING TRANSPORTATION STORAGE
protects every step of the way

KOLD-HOLD MANUFACTURING CO. 620 E. Hazel St., Lansing 4, Michigan

Low-bed Trailer

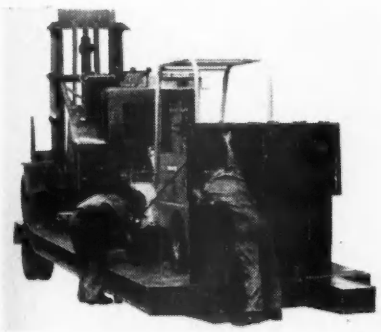


The two parts of the trailer are uncoupled at the gooseneck after hydraulically-operated landing gear is retracted. Heavy steel pins provide positive locking of tongue couplers

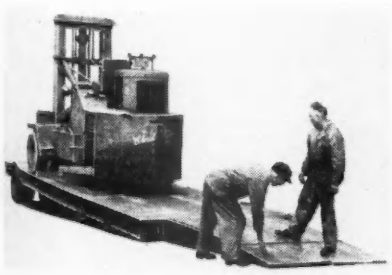
road level. The ramp's two sections then are unfolded, providing a smooth 8-ft approach to the trailer with an 8 deg grade.

The braking system is unusual in that four sets of direct-connected air brakes are employed to provide positive, quick-acting braking on each wheel. Snap-on couplings are used for both the hydraulic and pneumatic systems. A secondary set of couplings are used ahead of the trailer so that the entire trailer may be disconnected at the fifth wheel, and the tractor used with any standard type semi-trailer.

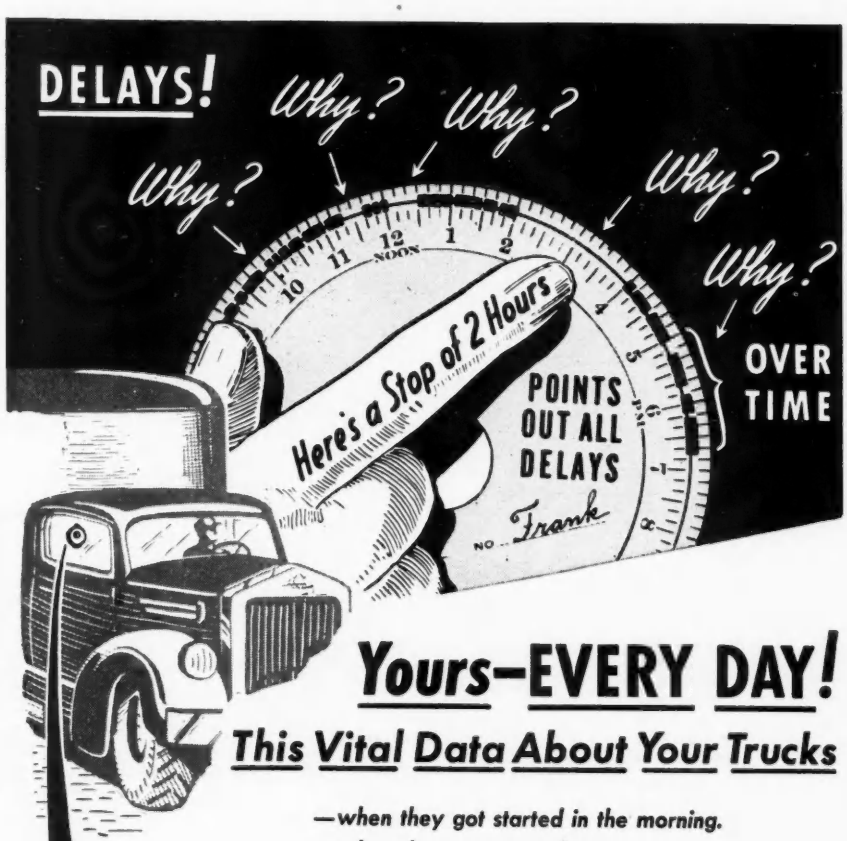
The tractor shown has a winch located behind the cab, and operated by the power take-off, to permit snaking large immobile cargo up the trailer ramp.



Landing gear is retracted, hose lines disconnected, and brakes are locked. Driver and helper unhook chain holding one of the two folded ramp sections. Ramp extends 8 ft with an 8 deg grade



Ramp is shown in down position. Vehicle on trailer will come down on its own power, but immobile units may be pulled off by winch, or fork lifts can make 8 deg ramp easily for palletized loads



Yours—EVERY DAY!

This Vital Data About Your Trucks

—when they got started in the morning.
—when they were working.
—when they were standing.
—how long they were idle—and why.
—was that Overtime necessary?

Look at the Servis Recorder chart above—note those "gaps" in the travel line, marked WHY. Each one shows up *idle time*—the truck wasn't running then. Were these delays justified, unavoidable—or—was someone to blame?

You want to know whether your trucks are losing valuable time now and then on their routes during the day—how much and how often.

The only *accurate* way to keep tab on all those delays, even down to 10-minute periods, is to attach a little SERVIS RECORDER; then the truck automatically *acts as its own Time-Keeper!* Write for full information. The Service Recorder Co., 1375 Euclid Ave., Cleveland 15, O.

The Servis Recorder

Shows Busy and Idle Time... All Day

These 8 paragraphs may save you trouble and money!

It's an accepted fact that many engine troubles can be traced to improper lubrication.

That's why we urge you to read the next few paragraphs. For we are convinced that by selecting Gulfpride-Diesel, the world's finest Diesel lubricating oil, you can save a great deal of trouble, and reduce maintenance costs.

For Gulfpride-Diesel provides outstanding lubrication. It is Alchlor-processed (an extra refining step exclusive with Gulf). It has a rich, full paraffin base that provides a particularly strong oil film and superior protection under the toughest operating conditions. *It will help you get longer engine life.*

And because Gulfpride-Diesel has full detergency, it will help keep your engines clean.

In automotive Diesel engines, high-temperature sludge, piston varnish, lacquer and stuck rings will be avoided. Deposits of excessive fuel soot from rich, full throttle operation can be minimized with Gulfpride-Diesel.

You'll use less oil with Gulfpride-Diesel—rings stay clean and free, insuring better compression and proper oil control.

When starting, even on cold mornings, the low pour point and high viscosity index of this oil assure a minimum of drag within the engine. Its patented antifoam agent prevents crankcase foam.

To find out more about Gulfpride-Diesel, contact your nearest Gulf Office.

GULF

GULF OIL CORPORATION • GULF REFINING COMPANY

Boston • New York • Philadelphia • Pittsburgh • Atlanta
New Orleans • Houston • Louisville • Toledo

There IS an easier way...

with a HEIN-WERNER HYDRAULIC JACK

You're really in trouble if you get caught with your tire down and no dependable Hein-Werner Hydraulic Jack to get your truck up in a hurry—safely and securely.

Dependability is built into H-W Hydraulic Jacks. Precision machined throughout, they have extra-strength pressure-tested malleable iron base, handle socket and top nut to reinforce at points of greatest strain. The exclusive Heinite Piston is proven to withstand ten times the wear of conventional cups or packings.

Every Hein-Werner Jack is factory-tested at 1½ times its rated capacity to do more than expected on every job. See your H-W distributor or write us for complete details today.

Hein-Werner HYDRAULIC JACKS

Made in models of 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity, as well as Bumper-Lifts and Axle Jacks for passenger cars and service jacks for shop use.

HEIN-WERNER CORPORATION • Waukesha, Wis.

New Federal Utility In ¾ to 2-Ton Range

A NEW UTILITY TRUCK, Model 15M, designed for a wide variety of uses by contractors, farmers and city delivery fleets where a heavy-duty light-weight vehicle is desirable, has been announced by Federal Motor Truck Co. It has a nominal rating from ¾ to 2 tons and a gvw rating of 12,000 lb with single tires; 14,500 lb with duals.

With respect to mechanical units, this model lists the JXEF engine, rated 91 hp at 3100 rpm. The clutch is Borg & Beck; 11-in., single plate. The rear axle is a Timken Model 53547DPH of split housing type with single speed, spiral bevel gear drive, and a 67 in. track. Standard gear reduction is 5.67 to 1, optional ratio is 6.67 to 1. A two-speed rear axle—Timken Model E-300—is available as optional equipment in the 1½ to 2-ton range. It has a gear ratio of 6.13 to 1 in high range, 8.40 to 1 in low range.

The standard transmission is Warner Model T9 with four forward speeds. An optional five-speed transmission also is offered.

Steering gear is the Gemmer Model 335, of triple tooth roller type with 18-in. steering wheel.

The frame is of large size—8 9/16 x 2⅞ channel section. Auxiliary springs are optional; and larger capacity main springs are offered at extra cost, if desired.

The Federal de luxe cab with its special items of equipment is supplied as standard on the new model.

Basic specifications are as follows:

Wheelbase (in.)	135	146	167	180	194
Chassis Weight (lb)*	3950	4000	4105	4170	4240
Cab to Axle (in.)	56-¾	67	88	101	115
Suggested Body Length (ft)	8	9	12	14	16

* With 6.50/20 single tires.

SHORT OF TRUCKERS?

A CEMCO HYDRAUL-LIFT TAILGATE AND THE DRIVER MAKE A ONE-MAN CREW

One man can handle heavy drums (as illustrated) or other heavy material with a CEMCO hydraulic operated tailgate to do the lifting. It lowers or raises load between ground and truck bed level—or holds it securely at any point in between. Safety device prevents overloading.

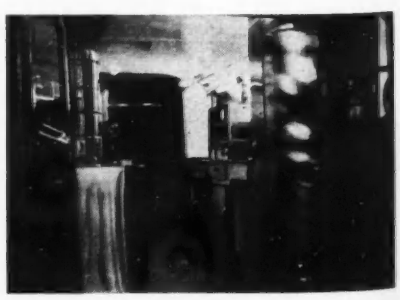
Mounts on any truck or semi-trailer. All mounting accessories included. Total weight of tailgate is only 733 pounds yet it lifts up to one ton.

Sold and serviced by leading truck equipment distributors. *Write to Cemco Industries, Inc., Dept. A, Galion, Ohio, for the name of the one nearest you.*

CEMCO INDUSTRIES, INC., GALION, OHIO

Ship's Service Canteen

Designed and built by Franklin Body & Equipment Corp., Brooklyn, new mobile canteen will provide hot meals for Navy workers in Newport News

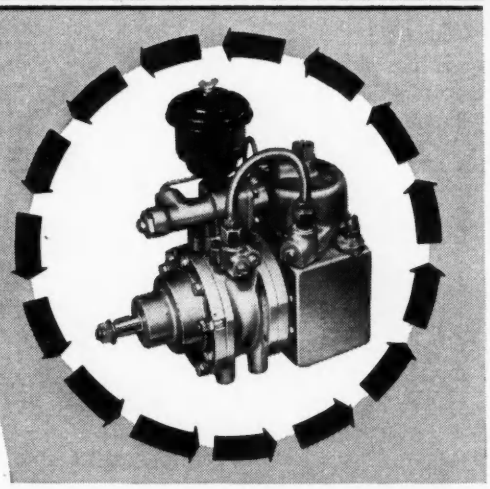


Interior is mostly stainless steel. Unit is self powered providing current for cooking, heating, refrigeration, lighting

Wagner Air Brakes

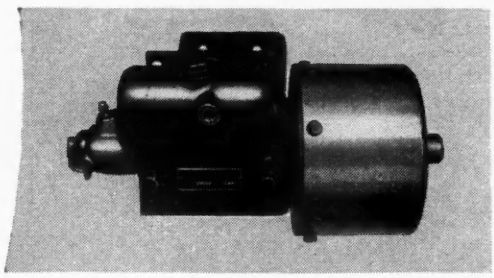
FIRST *In Economy and Reliability*

HERE'S WHY



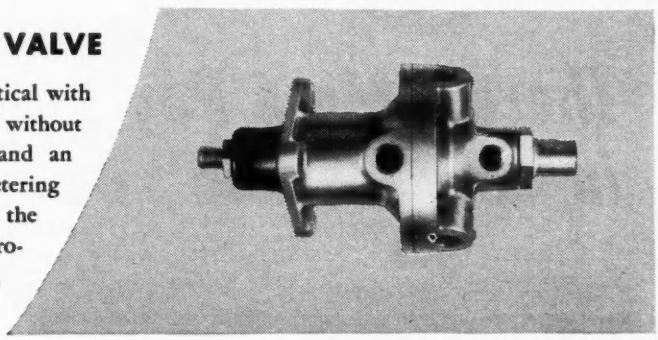
1 THE ONLY SYSTEM WITH THE ROTARY AIR COMPRESSOR

A most important factor in the efficient, safe, economical operation of air brakes is the "heart" of the system—the compressor. That's why Wagner Air Brake Systems include the famous Rotary Air Compressor. This revolutionary type of compressor utilizes the rotary principle and provides a smooth flow of compressed air at all times. Compactly built, it requires minimum space, mounts easily under the hood and can be either belt or direct-driven.



2 THE WAGNER POWER CLUSTER

Another unique feature of Wagner Air Brake Systems. Converts 100 pounds per square inch of air pressure into 1500 pounds per square inch of hydraulic pressure. This unit consists of an air-power cylinder assembled direct to a standard hydraulic master cylinder. No loss due to linkage or friction.



3 THE WAGNER PUSH-TYPE APPLICATION VALVE

The flange mounting on this application valve is identical with that of the master cylinder . . . it is easily installed, without extra drilling. The original pedal linkage is used and an adapter is furnished to connect the valve. The metering characteristics of the push-type valve are such that the air pressure admitted to the power cylinder is in proportion to the foot pressure applied on the brake pedal, assuring smooth deceleration.

These are only a few reasons... *Write for Complete Information*

Safety is the watchword of the automotive industry and you can get brake safety and efficiency on every vehicle in your fleet by installing Wagner Air Brakes. They are available in systems to meet every requirement. Write today for your copy of Bulletin KU-50B.

Wagner Electric Corporation
6470 Plymouth Ave., St. Louis 14, Mo., U.S.A.

Wagner Electric Corporation EST. 1891

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID · NoRol
CoMax BRAKE LINING · AIR BRAKES · TACHOGRAPHS
ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

The System With The Rotary Compressor

K49-1A

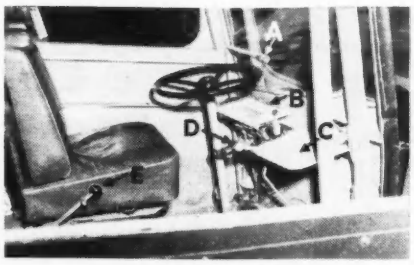
UPS Delivery Car

Continued from Page 72

maintenance, the mechanics say that this installation is the next best thing to a fully exposed engine.

The gvw rating is 7500 lb.

To date, 12 of these units have been placed in service, and more may be added when replacement of older vehicles becomes necessary.

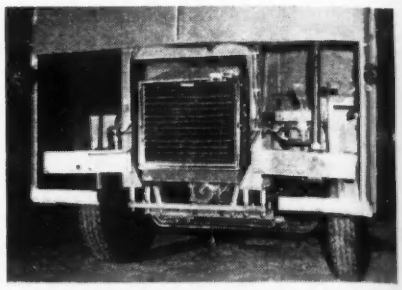


Operating end of front-entrance job showing door operating lever, A; instrument panel, unenclosed for maximum accessibility, B; driver's lighted "desk," C; positive, non-slip emergency brake, D; and gear shift lever, E

Heavy Job Has 41-In. Cab

THE new 25,000 gvw truck shown in the illustrations is used to haul merchandise from department stores to central sorting plants, and from the sorting plants to the various city and suburban delivery stations.

The merchandise is handled in box containers mounted on casters, and the major problem always has been how to get the biggest payload within a given dimension. With this model, the load reaches to within 41 in. of the front panel. This was made possible by a unique design of the steering column.



Front panel of line haul job removed to show construction details and steering post. Ward LaFrance chassis components are used

The oversize springs, thoroughly performance-tested, also have proved to be a good innovation. In addition to their extra length, the springs have other interesting design features. The front eyes are designed for a press fit of a solid pin. Needle bearing assemblies slide over the extension of the pin on each side of the eye. They require lubrication but once a year, and it is believed that they probably will last the life of the truck.

The rear end of each spring is of the sliding type. Special construction eliminates chattering when the truck is empty, and controls the axle position even if the front half of the spring should break.

Another noteworthy feature is the power-to-weight ratio, designed so that the engine may be governed several hundred revolutions less than the manufacturer's recommendation. This results in low oil consumption, low fuel consumption, and vastly improved engine life.

With the engine governed at a very low speed (2000 rpm), this large line-haul job can do 50 mph in overdrive.

END

(Please resume your reading on P. 73)

Model Illustrated: Standard 3 cu. yd. contractors body with running boards, side braces and half-roll cab protector. Mounted over Marion model 721A hoist.

There's More Pay Load in "On The Job" Design

Extra pounds on every trip . . . faster loading and unloading . . . fewer lay-ups in the repair shop . . . longer service life under the toughest hauling conditions. These extra-profit features are built into every Marion unit by engineers who study special hauling problems right *on the job*. Ask your nearest Marion Distributor about a Marion Body and Hoist designed under the actual working conditions you face. Or write direct.

MARION
DUMP BODIES and HYDRAULIC HOISTS

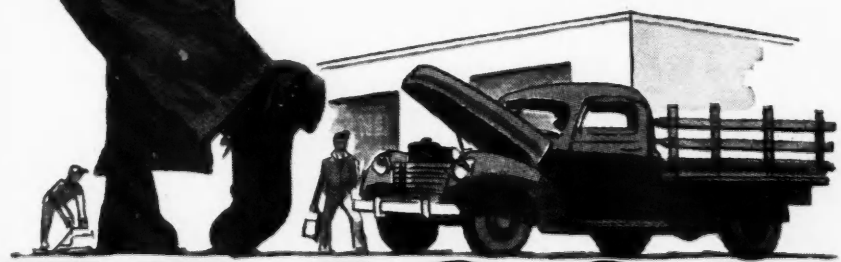
GET MORE DETAILS NOW
Just mail a post card or letter for the complete Marion catalog, or ask your Marion Distributor.

MARION METAL PRODUCTS CO., MARION, OHIO

"Let's get things straight about spark plugs!

"All spark plugs may look alike, but don't go thinking they are. See these plugs I'm putting in that truck? They're Edisons. See that gasket? It's 'spun-on'—that means it's part of the plug. I like it because I can't drop or lose it; it saves me time, and time is money. You'll like it because it's leakproof. That means it gives that motor of yours every ounce of power you pay for. Should save you some gas, too.

"You put Edisons in your engines and you can't go wrong. Wouldn't be without them myself. Same way about their batteries. I figure anything that has Thomas A. Edison's name on it is okay with me."



EDISON

SPARK PLUGS • BATTERIES • MAGNETOS

YOU CAN ALWAYS RELY ON AN EDISON

Thomas A Edison

THOMAS A. EDISON, INCORPORATED
AUTOMOTIVE DIVISION • WEST ORANGE, NEW JERSEY

INTRODUCING...

...The following changes in Mack Truck district managerships: J. E. DONOVAN, San Francisco; J. W. BIGGINS, Louisville; H. J. FIKEJS, Kansas City; T. J. COLTER, Milwaukee; A. P. COWLES, Springfield, Mass.; and R. J. MCGIVNEY, Worcester, Mass.

...W. J. RELLAFORD of Asbury Transportation Co., Los Angeles, reappointed chairman of the National Truck Roadeo Committee of ATA.

...RAY H. STUFF as sales manager, Nox-Sound Division, Nox Rust Chemical Corp.

Garrison HYDRAULIC STEERING BOOSTERS Provide...

1 FASTER PERFORMANCE ON SHORTER TURNS

2 INCREASES MAN HOUR EFFICIENCY

3 REDUCES ACCIDENTS AND DRIVER FATIGUE

Increased efficiency in both operator and equipment performance makes Garrison Hydraulic Steering Boosters a profitable investment. Recognized by Safety Departments of "Off-The-Highway" operations for the protection of operators. Garrison Steering Boosters reduce accidents caused by "wheel fight" and assure greater steering control in emergencies.

One installation will prove to you and your operator the efficiency gained by Garrison Hydraulic Steering Boosters. Installations can be made on most heavy duty trucks, wheel tractors, truck cranes, graders.

WRITE FOR INFORMATION TODAY

Garrison MANUFACTURING CO.
1506 SANTA FE AVE., LOS ANGELES 21, CALIF.

. . . JOHN R. REILLY, JR., as heater sales manager for Alemite Division, Stewart-Warner Corp., now handling South Wind heater sales.

. . . CARLOS D. KELLY as vice-president in charge of sales for Purolator Products, Inc.

. . . JOHN F. MCLEAN, JR. as sales engineer, Truck and Fleet Sales Department, Ford Motor Co.

...MAURICE DAVIER has become general manager of the Van Cleef Division of Johns-Manville Corp.

...JOHN C. KEPLINGER as executive vice president, Hercules Motors Corp.

...CHARLES S. CRAIGMILE as president of Belden Mfg. Co.

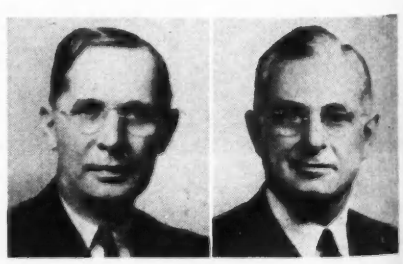
...ROBERT L. SOMMERVILLE as assistant general sales manager of The Electric Storage Battery Co.

...The following personnel changes at Weaver Mfg. Co.: CHAS. F. HODGSON as vice-president in charge of sales; EARL C. HENNING as domestic sales manager; RUEL LOGAN as sales promotion manager, and ROSS J. TAYLOR as assistant sales manager.

...HERBERT R. EARLE, JR., as assistant sales manager in charge of the Coach Division, Reo Motors, Inc.

...FRANK EDWARDS as sales manager of of the Heater Division, Eaton Mfg. Co.

(TURN TO PAGE 180, PLEASE)



. . . EEN F. GEYER (left) as chairman of the board and CHARLES E. FRANKS as new president of the Wayne Pump Co.

As they would say in ESKIMO- ᑯᐃᐧᐳᓪ

ᐅᓇᑦᑐᒍᒃ ᐃᓕᓴᕐᕕᒃ ᐅᓇᓱᐊᕐᓂᖅ ᐊᓯᐊᓂᖅ ᐅᓇᓱᐊᕐᓂᖅ ᓚᒃᐅᑦᑐᓗ ᑯᐃᐧᐳᓪ ᑲᐅᓴᓇᓪ. (Authentic Eskimo Symbols)

TRANSLATION ➡ **"IT IS GOOD! The houses on trucks are warm but the air is good like an igloo. It is warm without being nasty. Good for Kysor!"**

Or, as we interpret this expression: *HURRAH!* Truck cabs heated with FRESH AIR are livable—like igloos! It's warm inside, without suffocating. Hurrah for Kysor!

KYSOR TRUCK CAB HEATERS

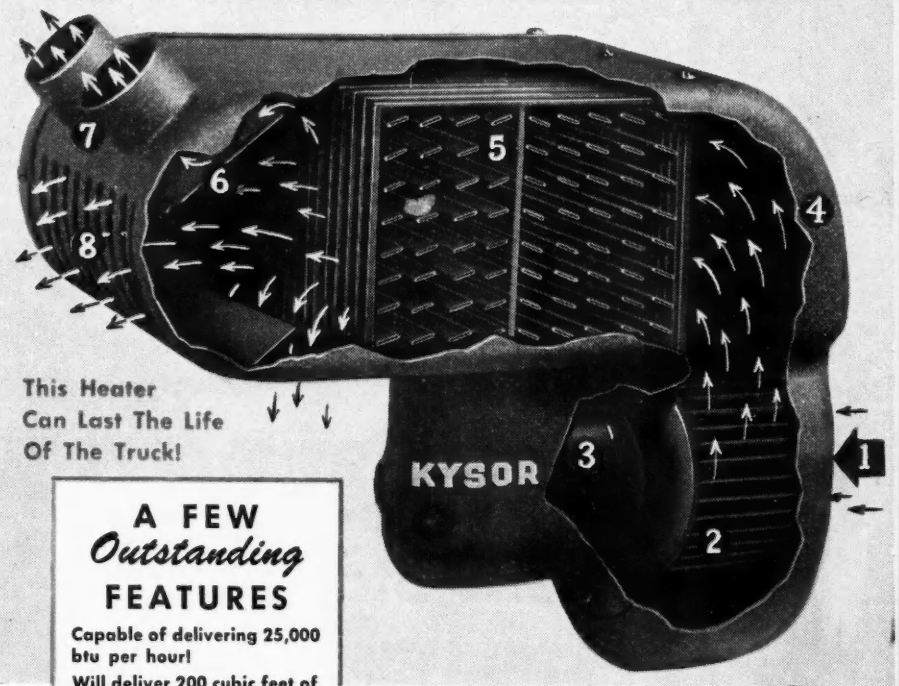
Look Behind the Scenes to See what makes a KYSOR Truck Cab HEATER TICK!

Note how this unusual heater works! Fresh air *(mind you!)* is drawn from the outside (intake indicated at No. 1 but not shown) by the sirocco blower (No. 2) and forced through the LARGE copper core (No. 5) to the heater and defroster outlets under pressure (No. 7 and No. 8). This insures finest possible heat distribution.

The pressurized heating and defrosting is completely controlled. There is provided a modulating type water valve with Boden wire control readily accessible to the driver to regulate the temperature output. There is also a rheostat switch to control the air volume output of the heater unit. The operator may further control the heat output by directing all or part of that output to the defroster, as required, by adjusting that Boden wire defroster control (No. 6). *A compact unit, only 14" by 12". Vibration-proof! Easy to install!*

The Kysor Truck Cab Heater Heats with FRESH AIR and provides Temperature Control.

ACCLAIM Since we announced this new heater recently, the demand has been splendid. Numerous Fleet Owners want installation yet this winter. *Write for special bulletin!*



This Heater Can Last The Life Of The Truck!

A FEW *Outstanding* FEATURES

- Capable of delivering 25,000 btu per hour!
- Will deliver 200 cubic feet of air per minute
- Core, 6 inches long, insures 125° air in sub-zero weather
- Has two defroster take-offs, one for each side of windshield

LEGEND: **1. Fresh air intake (not shown). 2. Sirroco type impeller. 3. General Electric Ballbearing Motor. 4. Sturdy cast aluminum housing. 5. 6-inch deep Copper Core 6. Boden wire defroster control. 7. Dual defroster outlet. 8. Heat outlet.**

NOW your drivers can be warm inside the cab, no matter how cold it is outside, yet won't stifle because of excessive heat or fall asleep from foul air. With the KYSOR TRUCK CAB HEATER they have circulating *fresh air-heat*—ventilation with or without heat.

In addition to these favorable conditions for efficient driving, there is this safety factor: the larger capacity of the defroster insures a clear, unfrosted windshield even under extreme conditions.

Consider KYSOR *Automatic* SHUTTERS, Too!

SAVE 8% ON FUEL

And test out Kysor Shutters, too! Each one should pay for itself in 3 months in the fuel saved alone! From 8% to 12%! *Ask for demonstration, or special folder.*

"Built to Last"

KYSOR HEATER COMPANY Cadillac, Michigan

CANADIAN REPRESENTATIVES... RAILWAY & POWER ENGINEERING CORP.

NEW GLASGOW · MONTREAL · NORANDA · NORTH BAY · TORONTO · HAMILTON · WINDSOR · WINNIPEG · VANCOUVER · EDMONTON

Introducing . . .

Continued from Page 178

. . . FERGUS P. CAMBERN as manager of Bekins Van and Storage Co., Fresno, succeeding W. R. HOLMES, who becomes district traffic manager.

. . . JACK ROBERTS as midwest division manager, Wausau Motor Parts Co.

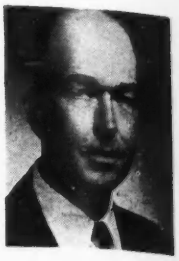
. . . M. J. L. SCHULTE as general sales manager of Stow Mfg. Co.

. . . C. A. DANA as chairman of the board, R. E. CARPENTER as president and J. V. MELICK as vice-president and secretary, Dana Corp.

. . . MAYNARD B. TERRY as vice-president of the American Brakeblok Division, American Brake Shoe Co.

. . . GORDON H. GROTH as vice-president and general manager, The Pennsylvania Rubber Co.

. . . GEORGE W. PATTERSON, re-elected for a fourth successive year as president of the Ford dealers' association in the New York sales district.



. . . WALTER M. SPENCER as assistant director of service of the Dodge Division, Chrysler Corp.

. . . W. D. JACOBUS as sales manager of the Automotive Division, Cleveland Pneumatic Tool Co.

. . . LON A. FLEENER of the White Motor Co., who has returned to his former post as sales manager of the wholesale division.

. . . ERNIE N. ROBINSON as assistant sales manager, Instrument Division, Stewart - Warner Corp.

. . . G. WAINE THOMAS as chief engineer, automotive, truck and industrial engine division, of Continental Motors Corp.

. . . FREDERICK G. WACKER JR. as president, and CHARLES H. WACKER III as executive vice-president of Ammco Tools, Inc.

. . . PETER GUARNER as factory representation for The Davisbilt Products Co. at Farmingdale, Long Island, N. Y.

. . . W. E. TROMANHAUSER as sales manager of Buffalo Fire Appliance Corp.

. . . KENNETH YOUEL as director of press and radio relations of the General Motors department of public relations.

. . . RAY A. LONG as president of Divco Corp., succeeding JOHN NICOL who has been made chairman of the board.

. . . HESSIE A. DAVIDSON of The Davidson Transfer & Storage Co. as president of the Baltimore chapter of the Army Transportation Association. HORACE LEHNEIS of the Baltimore Transit Co., is vice-president and K. W. WHITING of United States Lines, secretary-treasurer.

BIEDERMAN

The All-Star Truck

★ Advanced Design
★ Ready Accessibility of all Parts
★ Sturdy Construction
★ Dependable Power
★ Capacity for Big Loads

DEALERS: The Biederman National Standard Model, the peacetime successor to a long line of quality trucks since 1920, is a truck you cannot afford not to investigate. Nothing but the most sturdily constructed units by America's leading manufacturers are built into it. It's an All-Star team in itself. It has strength, durability, comfort for the long trip, easy accessibility of every part and modern design.

This is your opportunity to secure the Sales Franchise of a quality product. There is still some territory open. Write or wire us today for complete specifications.

BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO

"Look! Your best mechanic—a carbon scrubwoman"

Ferrex gets carbon—in the hot tank. Why pay high-priced mechanics to scrub carbon by hand? New Ferrex gets carbon in your hot tank because it is two materials instead of one. Gets other dirt, too. 100% clean parts save mechanics' time, permit accurate inspection. Work moves faster, stays on the road longer. Ferrex can save you money.

"GET CARBON OR NO PAY" offer proves it

Turco will charge your hot tank with two-part Ferrex and show you, in your own shop, the best hot tank cleaning you've ever had. If you don't agree that Ferrex gets carbon better, and dirt too, the trial costs you nothing. Write or call!

TURCO

FERREX gets the carbon

Turco Products, Inc., Main Office: 6135 South Central Avenue, Los Angeles 1

Factories: Chicago, Houston, Los Angeles, McCook, Ill. ★ Service Centers and Sales Offices in Principal Cities

CCJ Newscast

Continued from Page 39

now being released for showing at groups and meetings by the Towmotor Corp. of Cleveland, Ohio. Titled "The One-Man-Gang," this thirty-minute picture takes its audience into manufacturing plants to show the exact methods that are being employed to make startling reductions in the costs of materials handling.

Seiberling Rubber Co. has announced that its premium-level passenger car tires and puncture-sealing tubes will be placed under fair trade restrictions in all states where fair trade laws are in operation.

ICC REOPENS "LENOIR" AND "SCHENLEY" CASES

The Interstate Commerce Commission has reopened for oral argument before the entire Commission its proceedings in the Lenoir Chair Co. case (MC-96541) and the Schenley Distillers Corp case (MC-107079). In both cases Division 5 of the ICC had rendered decisions upholding the contention that "primary business," rather than "compensation" is the controlling factor in determining what is or is not "private carriage" under the Interstate Commerce Act.

1 MAN
+
1 Safety
JACK
Removes Any Truck
Or Bus Wheel
FASTER
SAFER • EASIER
Here is the jack that does *all* the heavy work. Spot it exactly without getting under the truck. Raise the truck and the wheel dolly carries the weight of the wheel.
Move the heaviest wheels wherever you want them with the jack wheel dolly as a tire and wheel carrier.
Speed up tire changes, wheel packs, and brake jobs with a DRUM SAFETY JACK.
DRUM Safety JACK
Models for every purpose:
1½—3—5—8—12
TON Sizes
Patents Pending
12-ton model
See your jobber or write to:
DRUM SAFETY JACK
THE CLEVELAND PNEUMATIC TOOL CO.
3769 East 77th Street • Cleveland 5, Ohio

Truck Trailer Production*

	November	Eleven Months
Vans:		
Insulated and refrigerated	204	2,053
Furniture	51	509
All other closed top	2,008	16,890
Open top	181	1,804
Total Vans	2,444	21,256
Platforms:		
With cattle and stake racks	112	1,487
With grain bodies	41	556
All other	471	4,778
Total Platforms	624	6,821
Tanks:		
Petroleum	194	2,978
All other	20	349
Total Tanks	214	3,327
Pole and Logging:		
Single Axle	102	1,977
Tandem Axle	52	1,537
Total	154	3,514
Low-bed heavy haulers	119	1,689
Dump trailers	54	631
Off-highway	97	2,350
Other trailers		
Total Complete Trailers	3,706	39,599
Trailer Chassis	125	1,825
Total Trailers and Chassis	3,831	41,414

* Industry Division, Bureau of the Census.

AMA PROPOSES CHANGES IN TRUCK ROADEO RULES

Several changes in the equipment specifications of the National Truck Roadeo rules have been proposed to the National Roadeo Committee of the American Trucking Associations, Inc., by the Sub-Committee on Truck Roadeos of the Automobile Manufacturers Association.

The proposals cover items found to be awkward during the 1948 Roadeos and would simplify the furnishing of equipment for the contests in the various states, as well as for the National finals. The proposed changes are still to be considered by the ATA National Truck Roadeo Committee. They include:

1. Elimination of requirement that trucks and trailers be loaded with a payload.

2. Specific gross weights be prescribed for each contest class, to be used in defining the vehicles and in calculating the engine sizes for the different classes. The folgine sizes for the different classes.

3. Minimum engine sizes for the three classes should be calculated by dividing the specified gross vehicle or combination weight in pounds by 450 with the answer specifying the minimum certified net horsepower of the engine.

4. To permit entry of tractors with fifth wheel locations well forward of the rear axle, manufacturers would be permitted to enter one or more tractors. C-o-e designs are not included in this change.

5. Increase in body length of full-trailer to a minimum of 24 ft.

6. For reasons of availability of equipment finals of the truck full-trailers class should be held in the West.

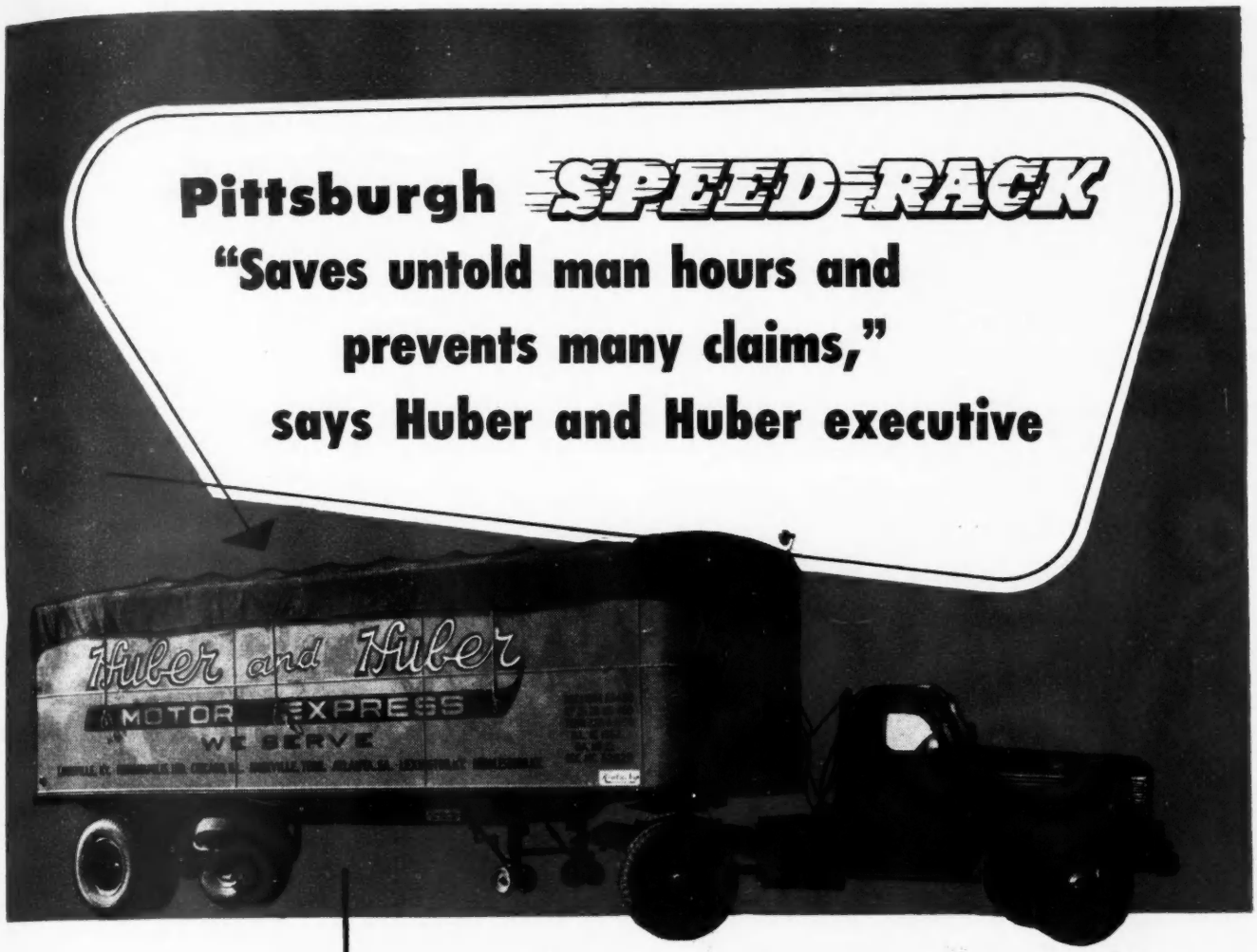
BUTTS SUCCEEDS NEALON

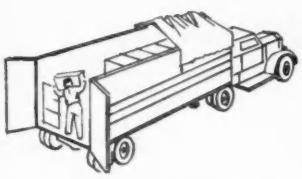
H. R. Butts, former sales manager of the Wire Division, has been named general sales manager of the Merchandising Division, The Electric Auto-Lite Co., succeeding F. A. Nealon, resigned.

(TURN TO PAGE 226, PLEASE)

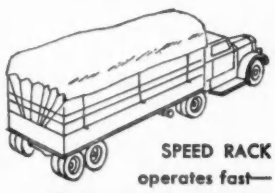
Pittsburgh SPEED RACK

"Saves untold man hours and prevents many claims," says Huber and Huber executive





SPEED RACK covers top in one easy operation by one man.



SPEED RACK operates fast—affords complete protection.

Mr. E. W. Huber, Vice President of Huber & Huber Motor Express, Inc., writes:

"These SPEED RACKS have made it possible for us to handle certain types of merchandise to a decided advantage over previous methods. They not only operate trouble free—they save untold man hours and prevent many claims. Our customers are well-pleased with the fact that loading and unloading trailers can be accomplished much more quickly.

"We can now point to our open-top trailers with a great deal of pride. You may rest assured that all additional open-top equipment in our fleet will be equipped with these SPEED RACKS."

For further information see your local truck or trailer dealer.

Pittsburgh SPEED RACK

PITTSBURGH STEEL PRODUCTS COMPANY

A Subsidiary of Pittsburgh Steel Company

Pittsburgh 30, Pa.

New Products

Continued from Page 56

P164. Helper Springs

Silico-Manganese helper springs are available for ½, ¾, 1, and 1½ ton models. They can add up to three extra tons of carrying capacity on 1½-ton models, and from ¾ to 1 ton on all other models. To meet varying needs, trucks owners can usually choose between springs of 6 to 8 leaves for the same model trucks. The progressive type of helper springs, used on most of the lighter models, fit under the primary spring. Standard auxiliary type helper springs used on the majority of other models, fit over the original spring. Maremont Automotive Parts, Inc., Chicago.

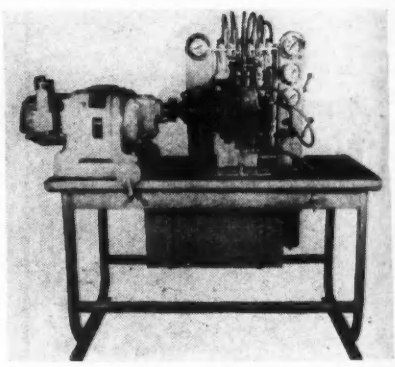
P158. Retaining Ring

Ramco spiro-seal steel ring construction is employed in the Ramco 10-Up Retaining Ring combinations. Known as Spirolox, the retaining ring positions and locks moving parts—pinions, bushings, bearings and the like—on shafts and in housings, eliminating nuts, caps, machined parts, pins, keys and such locking and positioning means. It is made of a flat spring steel band, wrapped twice around itself. Thus it is concentric in its groove at all times, and gapless. Elimination of the gap provides bearing surface for thrust loads at all points on the ring's circumference; holding strength is equally distributed around the circumference of this ring. Ramsey Corp., St. Louis, Mo.

P159. Metal Cleaners

Two new developments in phosphoric acid cleaners, known as Rust-Sol No. 123 for wash-off or immersion type of cleaning and Rust-Sol No. 113 for wipe-off or hand application, have both wetting and dispersion qualities. They emulsify oil and grease and penetrate the oil coating to the steel surface where they dissolve rust and oxide with a reaction that leaves a protective iron phosphate coating. Welding flux, soldering acids and other corrosive salts are dissolved and neutralized. Klem Chemicals, Inc., Dearborn, Mich.

P160. Diesel Test Stand



A test stand for calibrating the flow of fuel to each cylinder of diesel engines from the fuel injection pump is now available. In addition to the calibrating equipment, apparatus for checking pump speed, head pressure, transfer pump vacuum and transfer pump pressure are included as part of the stand. Governor reactions can also be checked and adjusted for any desired engine speed.

Test stand is a self-contained unit, complete with its own power, fuel reservoir and filter. Base consists of a formed steel table top mounted on welded steel frames. By using various adapter brackets, numerous makes and models of pumps can be tested. Automotive Products, Inc., Portland, Oregon.

(TURN TO PAGE 188, PLEASE)

Fleet Operators from coast to coast are speeding operations and reducing maintenance cost through use of GATKE *CUSTOM-BILT* Brake Blocks and Liners.

Here are some of the Extra Value Features—

Smooth, non-grabbing action that adds miles to tire life and avoids needless strain on Operators and Equipment.

Tremendous holding power—effectively maintained at all service temperatures.

Extra wear life—keeps equipment fit for the road with fewer adjustments and reduced maintenance expense.

RESULTS TALK. Use GATKE *CUSTOM-BILT* Brake Blocks for your next five relines and compare.

SYSTEM PAYS!

Systematic Methods of Brake Inspection and Maintenance lead to improved performance results, less interruption of schedules, reduced costs and time savings.

The GATKE Brake Survey is a practical aid to Systematic Brake Maintenance.

Ask your GATKE Jobber Salesman, or write for particulars.

Gatke CUSTOM-BILT BRAKE LININGS
BLOCKS SETS ROLLS SHEETS
GATKE CORPORATION
248 N. La Salle St., Chicago 1, Ill.

N·A·P·A
National Automotive Parts Association
Assurance of Quality

AS ADVERTISED IN
THE SATURDAY EVENING
POST

More than ever–

Your NAPA Jobber is a Good Man to Know!

As part of the nation's largest independent parts organization, your NAPA Jobber is in position to give you unparalleled service on parts and supplies for cars, trucks, and buses, of *all* makes and *all* ages.

Under his own roof, he has stocks of finest-quality parts to meet practically any normal need. In emergencies requiring seldom-needed numbers (generally available only from distant factories) your NAPA Jobber can get overnight delivery or better from master stocks in the nearby NAPA Warehouse.

If your parts requirements present any unusual problems, your NAPA Jobber will be glad to discuss them with you, and work out plans to meet them effectively and promptly. The service your NAPA Jobber can provide saves you time in picking up parts—gives you *more* productive shop-time—and assures you of genuine quality in every purchase.

NAPA advertising in The Saturday Evening Post is now taking the story of NAPA's supply service and quality standards to motor vehicle owners everywhere . . . added evidence of NAPA's scope and resources, and its confidence in its own ability to deliver the type of service you want.

If you have not seriously explored the advantages of doing business with your NAPA Jobber, we believe it will be worth your while.

NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT 1, MICHIGAN

N·A·P·A *is the largest Independent Parts Organization in the Industry!*

American Brakeblok · Allied · Wisconsin Pistons · Sleeves · United Parts · Fuel Pump · Hydraulic Brake · Speedometer and Brake Cables · Monmouth Engine Bearings · Clutch Plates & Parts · Chassis Parts · Trico Vacuum Operated Safety Products · Allied Grapho Water Pumps · Parts · Packing · Brown Lipe Gear Boxes · Balkamp · Zollner Piston Equipment · Buffalo Mufflers · MicroTest Gears · Axle Shafts · Allied A.P.C. Valves · Standard Grease Retainers · Detroit Universal Joints · Celoron Timing Gears · Buffalo Fire Extinguishers · Allied Raymond Valve Springs · Briggs Shock Absorbers · Echlin Ignition Parts · Allied Precision Piston Pins · Duckworth Timing Chains · Dittmer Transmission Gears · Martin-Senour Automotive Finishes · Belden Wire and Cable · New Britain Hand Tools · Federal Ball Bearings · Spicer Universal Joints

STANDARD FOR THE
AUTOMOTIVE TRADE

SINCE 1899

Insist upon Kester Flux-Core Solders from your jobber. The "boys back shop" will do their work faster and more efficiently using Kester Solders with their superior fluxing action. Be assured of repeat business with complete customer satisfaction. Use Acid-Core for general work, Plastic Rosin-Core for electrical and radio work.

R/x Prescription
For Good Soldering

The tin-lead content of Kester Acid-Core Solder was established many years ago by you, the trade, as the alloy that would give the best results. Do not accept substitutes.

KESTER SOLDER COMPANY

4201 Wrightwood Avenue, Chicago 39, Illinois

Factories Also At
Newark, New Jersey • Brantford, Canada

1899 50th Anniversary 1949

KESTER SOLDER

New Products

Continued from Page 184

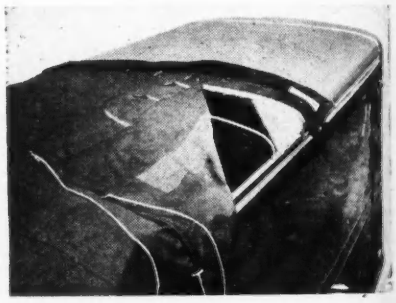
P161. Anti-Skid Camelback

A specially compounded recapping stock known as Mogrip is impregnated with abrasive material for maximum traction, and recommended for use under the hazardous driving conditions encountered in winter and wet seasons.

Greater safety is said to be characteristic of Mogrip. Camelback is impregnated throughout with minute abrasive particles which give skid-free traction on wet, slushy, or icy roads it is stated. As the particles at the surface gradually fall out, the tiny holes create a suction that provides additional traction. At the same time, other abrasive is constantly coming to the surface as the tire wears. The Mohawk Rubber Co., Cleveland, Ohio.

P162. Adapter Canvas

This new type adapter canvas with improved fasteners is said to make tarp removing easier. For open top trucks and trailers this 14-in. panel



can be joined to the tarp so that the covering can be removed or installed by one man in a matter of minutes. This method eliminates the necessity of using bolt-on-bar or bolts to hold the canvas. Adapter is also available on new tarps. Aero Canvas Products, Indianapolis, Ind.

P163. Wrecking Crane

Featuring twin booms, which operate individually or as a unit, this 8-ton wrecking crane, known as the WC-8, handles overturned trucks and trailers, on or off the highway, down an embankment or in hard-to-get-at spots. Controls for the two 4-ton booms are at side or in the rear.

The booms of heavy steel tubing,

(TURN TO PAGE 188, PLEASE)

Exide
BATTERIES

Dependability and long life...assure low cost per mile of operation...

All its service-proved features continue to make Exide the outstanding battery for the needs of today

- Heavy, oversize plates.
- Greater capacity.
- Self-cleaning, non-spitting vent plugs.
- Double insulation between plates.
- "Bull's Eye" electrolyte leveling device.
- Heavy inter-cell connectors.
- Hard rubber container.
- Positive cover seals.

"Exide" *Reg. Trade-Mark U. S. Pat. Off.*

1888...DEPENDABLE BATTERIES FOR 61 YEARS...1949

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

ignition replacement parts

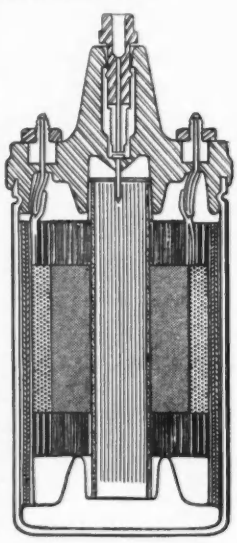
fuel pumps • carburetor kits

air cooled coils • voltage regulators

When you use P&D products you can be sure you're giving your customers top performance. Genuine P&D parts are *manufactured completely* in the modern P&D plant — from raw materials to finished products. Long experience in automotive engineering combined with skilled workmanship assures you of the best products you can get.

Take the P&D coil, for example. Notice how the combination high tension terminal for both screw and plug type connections (a solid brass insert) is molded into the cap to assure a moisture-proof connection. Then notice the patented one-piece (seamless) air cooled container — ribbed to give ample surface to dissipate heat. Our exclusive Perma-Sealing method of locking the plastic top to the container makes for an absolutely moisture-proof seal.

Write today for your free copy of Catalog No. 49 giving full information about P&D condensers, contacts, switches, relays, etc. — the one *complete line* of quality starting, lighting and ignition products for all automobiles, trucks and buses.



Turn Out Better Tune-up Jobs With PeeDee

P&D MANUFACTURING COMPANY, INC.

LONG ISLAND CITY 5, N. Y.

New Products

Continued from Page 186

swing as a complete unit. Free wheeling drums operate on large oversize shafts. Gears are machine cut. Working mechanism is totally enclosed. Manley Division, York, Pa.

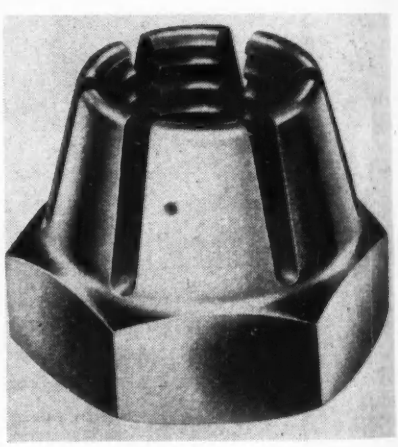
P157. Brake Blocks

AMCO Safety Rated Brake Blocks are not affected by wet or slushy conditions. The blocks are of molded construction and come in the range of friction needed.

Available in four styles: 1. Smooth back, full thickness, to be used on all smooth surface shoes; 2. Smooth back, tapered, for use on Timken "P" type brake shoes; 3. Straight lug back is a type used on shoes having recessed slots; and 4. Round lug back is required by shoes with countersunk bolt holes. Asbestos Mfg. Co., Huntington, Ind.

P165. High Temperature Nut

A new nut design features fastener applications where temperature ranges from —65 deg. F. to 1200 deg. F. Fasteners are all self-locking, and provide protection against vibration, impact and stress reversal in both fully seated and positioned set-



tings. This series, the company states, is particularly suited for use on exhaust manifold systems and other installations where high temperatures create strength and seizure problems in ordinary fasteners. Elastic Stop Nut Corp. of America, Union, N. J.

END

(Please resume your reading on P. 61)

"The FORD F-7 averages 7½ MILES PER GALLON ...up to 17 tons!"

Roadside Report

FORD Bonus Built TRUCKS

J. L. BOLDUC

MINNEAPOLIS
MINNESOTA

"THE NEW FORD F-7 Big Job looked good to us so we put one to work. Result—we have already purchased two more and will need five more units this year," writes J. L. Bolduc, vice-president and general manager of the Mueller Transportation Co. "The power and economy, pulling up to 17 tons, is something we cannot afford to be without. The Ford F-7 averages 7½ miles per gallon. And our drivers like the pickup, the comfort, and the maneuverability."

With Mr. J. L. Bolduc, as with thousands of other extra heavy duty truck users, the new Ford 145-horsepower Big Jobs are all the go! One reason why . . . engine power second to none in its class. Second reason . . . the luxury of the new Ford Million Dollar Cab. Third reason . . . Bonus Built construction, a feature of every one of over 139 Ford Truck models. Bonus Built is the superstrong construction that contributes to long truck life. Life insurance experts prove Ford Trucks last longer!

ONLY THE FORD BIG JOB

HAS ALL THESE FEATURES!

- ★ New 145-h.p. Ford V-8 engine for top performance.
- ★ Ford exclusive concentric dual-throat carburetor for more power, more economy.
- ★ New heavy duty 5-speed transmissions for operating flexibility.
- ★ Big Ford rear brakes for sure-footed stopping; 16-inch by 5-inch in the F-8.
- ★ Ford Super Quadrax 2-speed axle with vacuum shift for performance flexibility in Model F-8 (single speed axle also available); single-speed Quadrax Hypoid Axle in Model F-7.
- ★ Large diameter (10-inch) wheel bolt circle with 8 studs to allow for extra-strong hub construction.
- ★ Million Dollar Cab with Ford Exclusive Level Action suspension for greater driving comfort.
- ★ Nationwide service from over 6,400 Ford Dealers.
- ★ Ford Bonus Built construction for long truck life.

Gross Vehicle Weight Ratings: F-8 up to 21,500 lbs., F-7 up to 19,000 lbs. Gross combination ratings: F-8 up to 39,000 lbs., F-7 up to 35,000 lbs.

FORD 1949 *Bonus Built* TRUCKS 1959

BUILT STRONGER TO LAST LONGER

USING LATEST REGISTRATION DATA ON 5,444,000 TRUCKS, LIFE INSURANCE EXPERTS PROVE FORD TRUCKS LAST LONGER!

A Bob-Sledder Requires Special Equipment . . .

YOUR CARS AND TRUCKS NEED

PURITAN *Super 60* BRAKE FLUID

Maintenance costs on brake systems can be reduced by using Puritan Super 60 Hydraulic Brake Fluid—developed especially for heavy duty service. Here is a brake fluid compounded from organic materials to withstand the extreme conditions of commercial service, not to deteriorate even after long gruelling use—and to be kind to the other parts of the brake system. See how Puritan Super 60 has all the characteristics you need in a brake fluid for your fleets.

BOILING POINT 370°F: No danger of brake failure due to vaporization.

POUR POINT 40°F BELOW ZERO: Remains free flowing and mobile even in Arctic weather.

NON-GUMMING AND NON-OXIDIZING: Has a special base that does not gum or oxidize under any operating conditions.

MOISTURE ABSORPTION: Capable of absorbing all moisture of condensation—thus protecting wheel cylinders and metal parts against corrosion.

INERT TO RUBBER: Does not cause rubber cups to swell or deteriorate.

MISCIBLE: Mixes completely with all existing brake fluids made with castor oil, synthetic or glycerine bases.

You can keep your cars and trucks producing longer, your brake systems dependably safe, and reduce your maintenance costs by switching to Puritan Super 60. You'll be money ahead to make a fresh start by cleaning out old, gummy brake fluid with Puritan Hydraulic Brake Flushing Fluid and refilling with Puritan Super 60 Brake Fluid. Get both from your NAPA jobber.

PURITAN COMPANY, INC.
ROCHESTER 6, NEW YORK
HYDRAULIC BRAKE FLUID AND FLUSHING FLUID • GASKA-SEAL NO. 1, 2 AND 3
SHOCK AND KNEE-ACTION OIL

NAPA
Associated for Quality

Tested Ideas

Continued from Page 87

that one reason our floors rusted out so quickly was because there seemed to be no ready way for the surplus water to get out. It remained on the floor of the truck without any direct means of egress. In the new bodies with the heavy diamond plate steel floors we had two drains made. These consist of two slots running the length of the truck (also Fig 3). These slots are the lowest points and the water runs to them and out on the ground. This has contributed much to giving us longer life for our truck bodies.

Our new steps were also made of the same heavy diamond steel plate. While the stuff wore well and resisted moisture, it was found to be slippery underfoot when wet and a hazard to the drivers. Again we resorted to undercoating and found it to be an excellent non-skid material (Fig. 4). We now paint these steps at regular intervals. Undercoating can be applied with a brush. It will dry in a few hours and it can be applied to steps and running boards without extra pre-cleaning. All that is needed is to rub the surface off so no dirt remains and paint on the undercoater.

While on the subject of skidding, we have eliminated most of our need for tire chains in winter by using a mud and snow treaded tire. Trucks that traverse routes that may be muddy and slippery in rain and snowy weather regardless of season, wear mud and snow tires throughout the year.

Oil Heaters in Trucks

WE use oil heating stoves for heating trucks during the winter time instead of conventional hot water car heaters. These heaters provide sufficient heat for comfort and are popular with the drivers. The cost of operation is about one-tenth of what the cost would be if drivers were to run their engines to keep warm. This also prevents our operating and repair costs on engines from getting out of all proportion with the number of miles covered by the truck. This idea would be of little use to a fleet

(TURN TO PAGE 194, PLEASE)

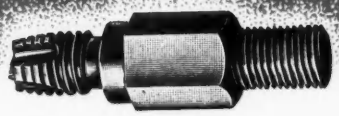
New TIME SAVERS - MONEY MAKERS
by CHAMP-ITEMS

No. 610

No. 610 UNIVERSAL CONTINUOUS THREAD RODS —Can be used as stud or bolt. 6 sizes for a world of jobs. List **30¢** each.

These are but a few of the more than 200 Champ-Items automotive replacement parts to help you lick service problems.

ORDER FROM YOUR JOBBER

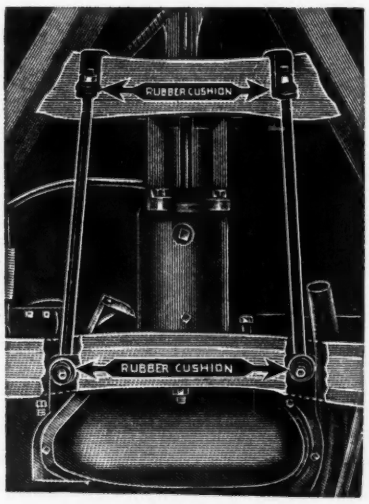


No. 983-ST

No. 600

No. 983-ST SELF-THREADING OVERSIZE TRANSMISSION STUDS—For Chevrolet 1934-46 has special thread end designed to cut its own perfect thread. Replaces the standard stud when threads are stripped or loose in housing. Can be used as standard replacement stud or oversize stud. Made of hexagon heat-treated steel with increased pitched diameter for a stronger and tighter stud job. List **$1.00** per pair.

No. 600 UNIVERSAL STUDS — For Manifold, Transmission and Motor Repairs. Made of 1035 steel heat treated. 17 sizes for practically every need. List **15¢** each.



No. 579

CLUTCH CHATTER TIE RODS—Eliminate clutch chatter that occurs in forward and reverse speeds. No. 577 for Ford and Mercury cars. No. 578 for Chevrolet 1937-48. No. 579 for Buick 1941-49. List **$4.00** per set.

RE-CONDITIONING
CHAMP-ITEMS INC.
SHORT CUTS

CHAMP-ITEMS, INC. 6191 Maple Ave., St. Louis 14, Mo.

This Fleet starts instantly with KIM Hotstart

REG. U.S. PAT. OFF.

Engine Pre-heater

Trucks of Spokane grocery fleet with KIM Hotstarts connected to electric circuit.

Instant starting; no warm up time; no excessive use of the choke; no winter damage to cold engines—that is what KIM Hotstart means to the fleet shown here.

When the truck has finished its run the driver plugs the KIM Hotstart into the electric circuit. Controlled percolator action draws cold water from the engine, heats it, and circulates it back through the engine which remains warm.

Battery life is lengthened. Terminal heating costs are lowered. Engine wear and depreciation is cut to a minimum.

There is a model of KIM Hotstart to fit your trucks, tractors or stationary engines, both diesel and gas.

WRITE FOR LITERATURE

To learn how to avoid winter damage to your equipment, fill in and mail the coupon. You will receive illustrated literature showing operation of the KIM Hotstart, and the name of your local dealer who will gladly demonstrate it for you.

KIM HOTSTART MANUFACTURING CO.
West 917 Broadway, Spokane 11, Wash.

Please send literature, prices and name of local dealer.

Name_____

Company_____

Address_____

City_____

Zone_____ State_____

You'll Find What You Need in MICHIANA OIL FILTERS

Widely Accepted By Men Who Know

MICHIANA Oil Filters are designed to do the one job of thoroughly absorbing a maximum amount of dirt, grit and other foreign particles to keep the lubricating oil clean. Clean oil is vital to engine efficiency and engine life.

Doing this job well means a big saving in oil consumption—it results in a drastic reduction of early and unnecessary wear, eliminating premature replacement or repair of parts.

MICHIANA Oil Filters help conserve oil, eliminate waste and expense. With improved lubrication, longer engine life and satisfaction are assured. . . . MICHIANA PRODUCTS CORPORATION, Michigan City, Indiana.

A Good Oil Filter saves its cost many times over.

MICHIANA OIL FILTERS

Tested Ideas

Continued from Page 190

where long runs are the rule instead of the exception.

One of our main thoughts in connection with reducing the maintenance costs of our fleet was to make a study of each individual problem in an effort to arrive at a better method which would give us better results and lower costs. This included the safety and well being of employees as well as to the physical properties of the company.

Shop Safety Features

FOR example, we had several near-serious accidents in the shop as a result of tires blowing off the rim. We realize that fatal accidents have resulted from this kind of accident and that usually it happens because of carelessness. Such carelessness may be the result of trying to make a change in a hurry so that trucks can leave on time or for any of many good reasons. We didn't want it to happen to us if there was any way to prevent it so we kept working on the problem until we discovered that an outfit was manufactured which would definitely make it impossible for a tire to blow off the rim and hurt anyone.

The equipment is not new but it had not been brought to our attention before. It consists of a base on which the tire is to be clamped when inflated (Fig. 5). A heavy piece of channel steel (Fig. 6) clamps across the top of the tire and wheel when on this base and the tire cannot do any damage if it blows off. Use of this equipment is required.

It takes considerable energy and work to spread tires and examine the inside for nails, holes and carcass breaks. There is no point or profit in doing hard work by hand that can be done easier and better by tools or machinery. To help out on this chore we installed a pneumatic tire spreader (Fig. 7). The workman merely hangs the tire up on a rack and uses the pneumatic tire spreader as an extra hand. Turning the handle causes the tire to spread and stay open for thorough examination until it has been twisted to close. Needless to say this efficient tool has made it possible to

(TURN TO PAGE 196, PLEASE)

SHERWIN-WILLIAMS

KEM TRANSPORT ENAMELS

again PROVE their EXCEPTIONAL DURABILITY!

YELLOWSTONE Park Co., another Sherwin-Williams satisfied customer (for over 23 years), has this to say about Kem Transport Enamels: "These materials have always given us very satisfactory service, and I might add that due to our high altitude and extreme sun conditions, paints are subjected to considerable abuse . . . and we have found that your products have never faded materially . . . always maintain a neat appearance."

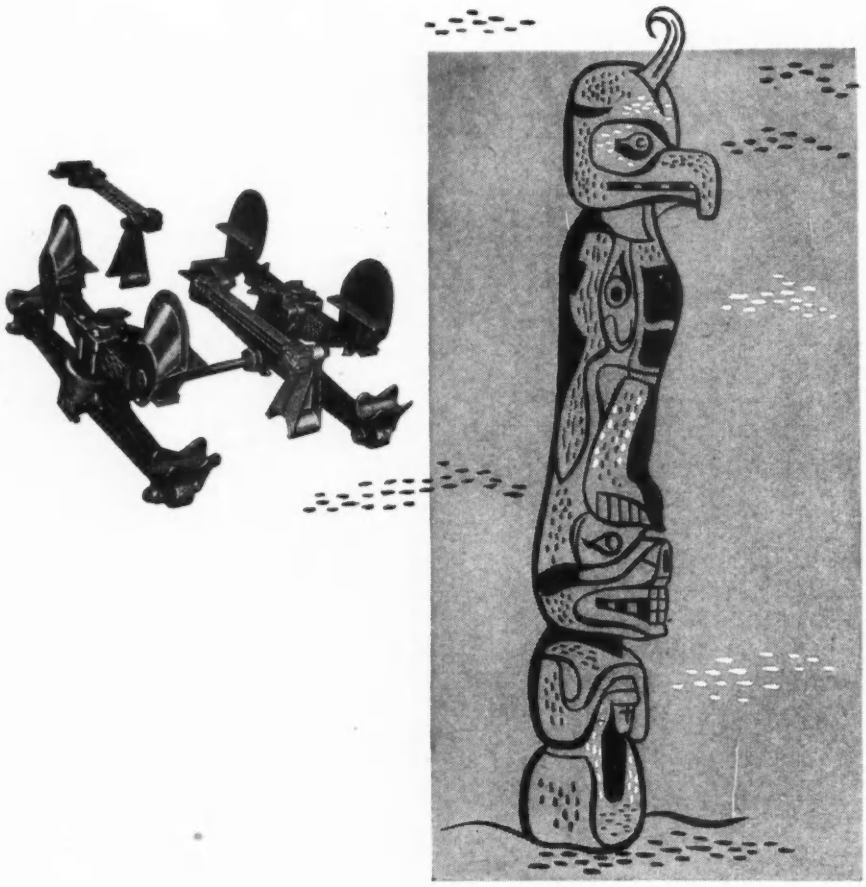
EXTREME SUN CONDITIONS do not materially affect tough Kem Transport Enamels!

HIGH ALTITUDES, that mean quick changes in temperature, do not bother the exceptional durability of Kem Transport Enamels!

No matter *what* conditions your fleet is operating under, you can rest assured that Kem Transport Enamels will stand the gaff . . . there are no finer or more durable automotive finishes made! And you can see your fleet in new color combinations—*before painting*—with our Color Visualizer! Write The Sherwin-Williams Co., Cleveland 1, Ohio. (Export Division, Newark, New Jersey).

SHERWIN-WILLIAMS AUTOMOTIVE FINISHES

"Follow the Leader"



TOP MAN ON ANY TOTEM POLE!

Are you a totem pole carver?

If so, you know that the space on top is always reserved for the best.

That's the place we're talking about—the top. For the tops in tandems are *Hendrickson* tandems!

Hand me my knife, son—the sharp one.

HENDRICKSON TANDEM

HENDRICKSON MOTOR TRUCK COMPANY

8001 West 47th Street • Lyons (Chicago Suburb) Illinois

Tested Ideas

Continued from Page 194

inspect more than twice as many tires in the same time without the useless expenditure of energy. Tire inspections are more efficient, too, and the dividends from this source alone make the cost of the tool negligible.

Our trucks are fueled at the plant before leaving on the next run. If we had to service them all at a given hour it would require the addition of several employes who might not have anything to do the rest of the day. Staggering does the trick.

The man who refueled the trucks had to hold the hose and try to guess at getting the tank full of gasoline without running it over. That was before we installed automatic filler valves on our gas hoses so that the service man could start the gas rolling and when the gas rises in the tank to where it hits the end of the nozzle, it shuts off the valve (Fig. 2). The gadget not only saves fuel, but a lot of time, too.

In order to keep track of our lubrication jobs we have a large blackboard on which the number of each truck is painted (Fig. 8). As the time for each unit to be lubricated comes up the number of the month is written opposite the number. Lubrication takes place in one month or 1000 miles.

No New Trucks For Old

ONE of the disappointing features in a dairy fleet is when you need to trade some of the old trucks in on new ones. Since these units are special purpose and mostly made for

(TURN TO PAGE 198, PLEASE)

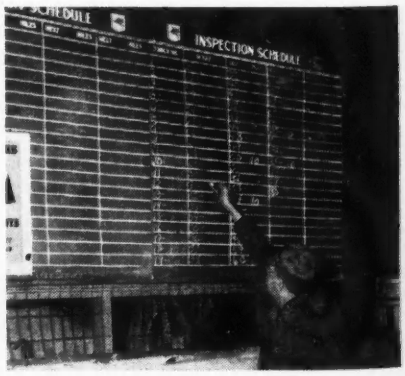


FIG. 8. Lubrication and inspection boards show dates all trucks are due

FOR SAFETY'S SAKE.. REMEMBER YOUR 3R's

The safety record of your fleet depends in large part on the safety condition of its brakes. It will pay you to look to Wagner for everything in brake service supplies . . . fluid, parts and lining. Wagner is a pioneer in the hydraulic brake field, and every product bearing the Wagner name is of genuine high quality and dependability.

You can depend upon Wagner quality because...Wagner products are used as original equipment by automobile manufacturers.

Ask for Bulletins HU-17G and HU-197 ...Tips for Better Brake Service . . . free on request.

REPAIR *with* WAGNER LOCKHEED HYDRAULIC BRAKE PARTS

Recommended for superior quality, perfect fit, and dependable performance. Backed by Wagner's years of experience in designing and manufacturing brakes for original equipment. Available either in complete kits or as completely assembled cylinders.

REFILL *with* WAGNER LOCKHEED BRAKE FLUID

An all-season fluid that functions perfectly under all atmospheric temperatures, and mixes with all approved hydraulic brake fluids. Used by car and truck manufacturers and recommended for all hydraulic brakes.

RELINE *with* WAGNER CoMaX BRAKE LINING

Designed, manufactured and thoroughly tested to insure more quick, safe, smooth stops per lining. Complete coverage for *all* your needs . . . in sets, rolls, blocks, slabs or cut segments. Available everywhere through Wagner wholesalers.

Wagner Electric Corporation
6470 Plymouth Ave., St. Louis 14, Mo., U. S. A.

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID · NoRoL
CoMaX BRAKE LINING · AIR BRAKES · TACHOGRAPHS
ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

FOR ADDED SAFETY . . . GET WAGNER AIR BRAKES . . .
THE ONLY AIR BRAKE WITH THE ROTARY COMPRESSOR

A49-7

No Sludge Troubles . . . and a Saving of 16¢ Per Gallon on Lube Oil!

STATE DELIVER SERVICE

How MAGNUS METAFFIN *Cuts Costs* for an Illinois Truck Fleet

THIS fleet is essentially a short-haul delivery outfit. That means a lot of stop and go driving, and ideal conditions for plenty of sludge and the troubles that go with it.

They had lots of sludge trouble that wasn't ended by heavy duty detergent oils, until they standardized on Magnus Metaffin eight years ago.

This effective inhibitor of engine sludge and varnish has enabled them to save 16¢ per gallon on the cost of their lube oil. They use reclaimed, non-detergent oil to which Metaffin is added in the proportion of 6½ gallons to each 55 gallons of oil.

Crankcases have been remarkably free of sludge ever since Metaffin was first used. Maintenance and repair costs due to inadequate lubrication, sticking rings and valves, clogged screens, excessive wear, etc., have been consistently low.

Mighty attractive savings are ready for you to cash in on if you'll adopt Metaffin for sludge control in your trucks or buses. Ask for Bulletin #23 to get the complete story.

MAGNUS CHEMICAL COMPANY • 38 South Ave., Garwood, N. J.
In Canada—Magnus Chemicals, Ltd., 4040 Rue Masson, Montreal 36, Que.
Service representatives in principal cities

Tested Ideas

Continued from Page 196

stand-up driving, the dealers are reluctant to give much for them because they do not have the same chance to resell them which they have on regulation trucks.

We have been offered as little as $35 for a truck in running condition in these days of high prices as a tradein on new units.

—So We Strip and Junk

WE have made a change here that has resulted in a much larger return from these old trucks. We strip them and sell them for junk.

We first reclaim all the good tires and tubes and return them to our stock. We often gain more than the trade-in price in the tires and tubes alone. We then examine the history of the battery and if in useable condition we return it to stock. We find keeping the battery will often give us a gain of at least one-half of the cost of a new battery.

We set these condemned units to one side in our garage and use our spare labor moments for the work. A truck will usually produce from 1 to 1½ tons of saleable iron which brings in sometimes as much as $40. The radiator is sold separately because of being made of brass. If it is of a type used on some of our remaining trucks we keep several for spares if they are in good condition or can be easily put in good condition.

In addition, we often get good spark plugs, battery cables, brake shoes, generators, water pumps, and various other parts that cost real money when we have to buy them.

Alamito Dairy Co. is a pioneer Omaha firm, having been established before 1900. Its present plant and garage were built on this site in 1914 and various additions and improvements have taken place since that time.

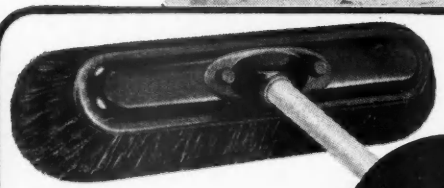
The fleet consists of 55 units, composed of three or four makes, and includes special dairy-type trucks and standard chassis trucks. The standard chassis trucks are used on the country and out-of-town routes.

END

(Please resume your reading on P. 88)

SPEED WASH FOUNTAIN BRUSHES

CUT WASHING TIME IN HALF!



No. 240 Oblong Speed Wash has 11" back, ideal for washing large trucks, trailers, busses, trains, walls and vats. Complete with 5 ft. handle.

11.75 each

In Lots of:	1	6	12	24
Price per brush	$11.75	10.95	10.20	9.45
Oblong head only	7.45	6.95	6.45	5.95

No. 250 Round Speed Wash has 5½" dia. back. Designed for washing small areas, passenger cars and light trucks. Complete with 5 ft. handle.

14.25 each

In lots of:	1	6	12	24
Price per brush	$14.25	13.45	12.70	11.95
Round head only	9.95	9.45	8.95	8.45

Soaking, Scrubbing and Rinsing in One Fast, Simple Operation! Picture the Savings!

With Speed Wash one man does the work of two, because clean fresh water is brought right to the washing surface. Water flows from a hose through the handle and brush. Eight evenly spaced jets in the brush back equalize the pressure. Each stroke does a complete job of soaking, scrubbing and rinsing.

Speed Wash construction makes for easy handling and long, efficient service. Tufts of nylon and high grade horsehair are stitched into the block by hand with rust-proof wire. They cannot come out. The block is covered with a permanent steel back which is equipped with a rubber bumper. Detachable five foot handle is a cadmium plated steel tube, fitted with hose coupling.

You take no chance when you order Speed Wash brushes. They are unconditionally guaranteed. If you return them within 10 days your money will be refunded in full. Order several Speed Wash brushes today. *Include check for postpaid shipment.*

MILWAUKEE DUSTLESS BRUSH CO.
530 N. 22nd St. • Milwaukee 3, Wis. Date.....

Enclosed find check for.....No. 240 Oblong and No. 250 Round Speed Wash brushes. Ship to:

Name.....

Address.....

City.....Zone.....State.....

PERFECTION

IS THE NAME TO *Remember*
WHEN YOU WANT

EXTRA VALUE

IN BODIES AND HOISTS

Photo shows a PERFECTION No. 354 Dump Body (11 yd. capacity) 216" x 84", mounted on trailer. Equipped with

PERFECTION

ISO-DRAULIC
ROLL-A-LIFT
TRADE MARK REG. U. S. PATENT OFFICE

PATENTS GRANTED AND PENDING

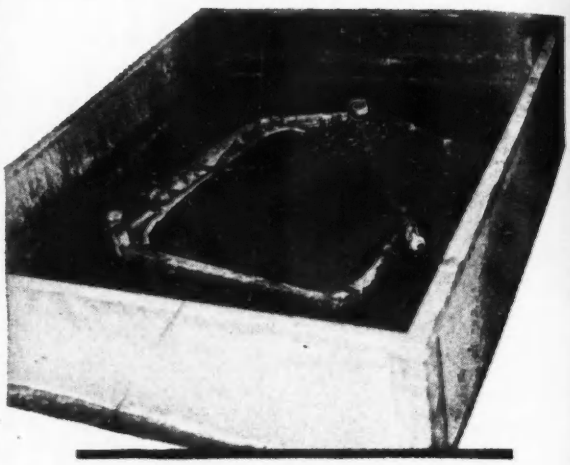
Write for complete information

THE PERFECTION STEEL BODY CO.
Galion, Ohio, U.S.A.

PERFECTION
STAKE and DUMP BODIES
HYDRAULIC HOISTS

FOR ANY TRUCK
STANDARD or SPECIAL UNITS
IN ALL SIZES • FOR ANY USE

Open up clogged radiators



in less time with Oakite Stripper

- **cleans fast** — Everything you want in a radiator cleaner you will find in built-for-the-job Oakite Stripper. The powerful cleaning action of Oakite Stripper thoroughly removes tube-clogging sludge and silt. It works fast. Cleaning solutions of this widely-used compound stand up over long periods.
- **costs less** — Oakite-conditioned radiators come out really clean... ready to give peak cooling performance... easier to inspect and repair (if that's needed). Your nearby Oakite Technical Service Representative will help you set up the Oakite way to desludge, descale and derust your radiators. Just give him a call. Or send for booklet below.
- **safe to use**

Free Illustrated Booklet Gives You Full Details

Facts about using Oakite Stripper to clean radiators in 36-page "Oakite Automotive Cleaning Booklet". Also tells about cleaning parts, descaling blocks, washing interior and exterior of carriers—hundreds of cleaning jobs you can simplify with Oakite cleaners. Send for your FREE copy today.

Oakite Products, Inc., 26D Thames St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE 1909 1949 40th ANNIVERSARY YEAR

OAKITE
REG. U. S. PAT. OFF.
SPECIALIZED INDUSTRIAL CLEANING
MATERIALS • METHODS • SERVICE

EXTRA
FLEET JOURNAL
EXTRA
VOL. 1 NO. 1
MUSKEGON, MICHIGAN
1948
NEW AUTOMATIC TIRE INFLATION EQUIPMENT MEETS ALL FLEET REQUIREMENTS!
SAVES TIRES, TIME, TROUBLE
MUSKEGON, MICHIGAN—Special Service Station Equipment Company announces a complete line of Eco Tireflators—precision air-operated machines for automatically inflating tires to pre-determined pressures with unfailing accuracy. Eco Tireflators are universal in application—will handle all automotive tire sizes and will operate on minimum air pressure.
Fleet operators will find special interest in the many Eco construction, design and operating features that lead to cost reductions in fleet operation because they assure accurate ... Tireflators are the answer ... and for positive accuracy in ... equipment absolutely necessary to the establishment of fleet tire maintenance systems. Eco's fast, automatic action speeds up fleet tire inflation; Eco's accuracy lengthens tire life and plays an important role in catching tire trouble before it happens on the road.
A booklet, containing details on Eco Tireflators has been printed by Service Station Equipment Company and is available through jobbers or by request to the Company. This booklet describes the many Eco engineering features in detail. Proof of Eco's accuracy through its precision sealed calibration and other outstanding features are found in this booklet.
Service Station Equipment Company points out that Eco Tireflators coordinate accuracy, dependability, safety, speed, simplicity and operating economy into a single precision unit to provide unequalled operating efficiency
and here's the equipment
THE NEW ECO Automatic TIREFLATORS
AIR
ECO
MODEL 98 Post Type Tireflator
MODEL 93 Reel Type Tireflator
MODEL 97 Wall Type Tireflator
ECO REMOTE CONTROL TIREFLATOR with reel—Model 94 without reel—Model 95
MEETS GRADE A TESTING SPECIFICATIONS AMERICAN STANDARDS ASSOCIATION
SERVICE STATION EQUIPMENT COMPANY · MUSKEGON, MICHIGAN
JOHN WOOD Affiliate

Progressive fleet operators know the importance of preventive tire maintenance systems—and know these systems are valueless without *correct* tire pressure to start with! Eco automatic Tireflators provide the basis for any preventive tire maintenance system because of their precision accuracy through factory-sealed calibration, 5 to 110 pound service range, faster delivery for large, high pressure truck tires and other features of special value to fleet operators.

Write for your free copy of the new "Fleet Journal" today. Get proof how Eco Tireflators lengthen tire life, save time and reduce on-the-road tire trouble.

SERVICE STATION EQUIPMENT COMPANY

MUSKEGON, MICHIGAN

Curved Windshields
wider Windows
mean faster schedules
more payloads

Time on the road, number of trips, and tonnage carried are always on the mind of the smart fleet operator.

The quicker your terminal-to-terminal runs, the more trips your rolling stock can make, the greater the tonnage your trucks can haul. When you achieve all three without sacrificing *safety*, you're in the money!

One of the most important moves you can make in this direction is to be sure the cabs of your trucks have large, clear windshields and windows of "Pittsburgh" Safety Glass.

Scientifically designed to give your drivers a clear, broad view of the road—from far left to far right—the new curved Safety Glass windshields and large Safety Glass side windows enable your trucks to roll safely at high speeds . . . with fewer rest stops and slowdowns.

If you are buying new trucks, or if glass on old vehicles needs replacing, you can pin your faith on Safety Glass by "Pittsburgh". The "Pittsburgh" trade-mark is your guarantee of the highest quality . . . your assurance of satisfactory service. There's a "Pittsburgh" branch or dealer near you. Look him up in your telephone directory. Pittsburgh Plate Glass Company, 2096-9 Grant Building, Pittsburgh 19, Pennsylvania.

Safety Glass BY "PITTSBURGH"

DUPLATE SAFETY PLATE GLASS · DUOLITE SAFETY WINDOW GLASS

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

you can

—make

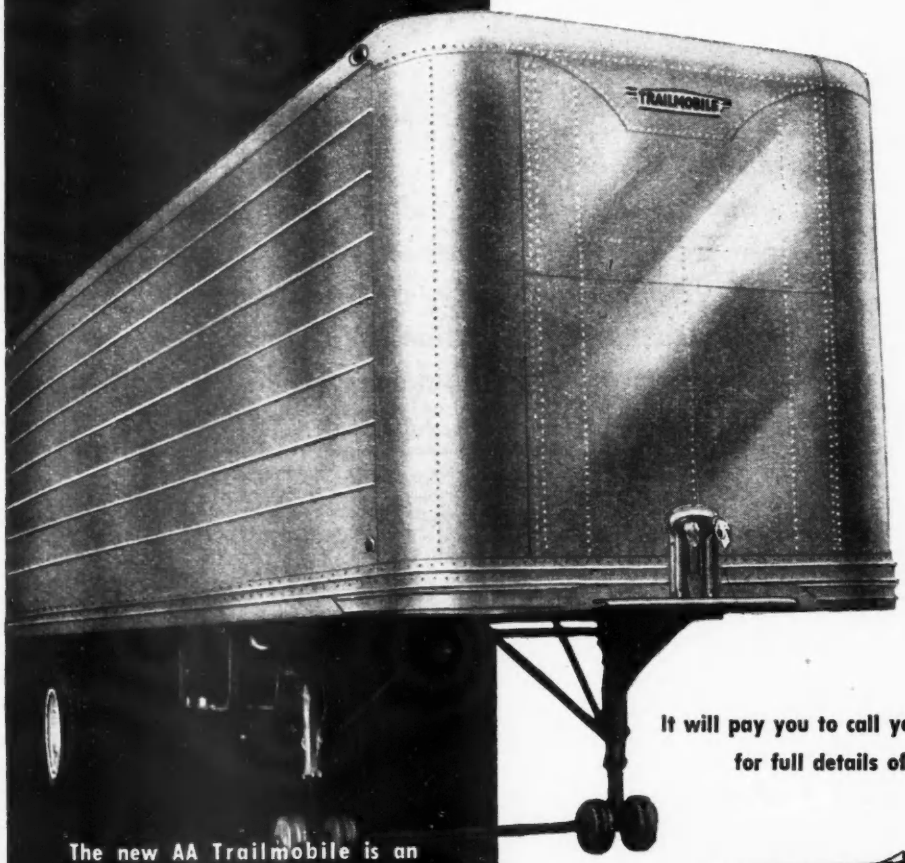
CARRY MORE PAYLOAD

MORE PROFITS

WITH THE *New*

ALL MODEL AA ALUMINUM

TRAILMOBILE



With the new All-Aluminum Trailmobile you can haul up to 3,000 lbs. more payload and thereby increase your net profits every trip. This increase in payload is made possible through the full and scientific use of alloy aluminum shapes, extruded from EXCLUSIVE Trailmobile dies. The rugged strength and light weight of these extruded shapes cannot be achieved by any other type of construction.

The aluminum alloy construction will also increase your profits in other ways. Operating costs are lower, whether the load is light or heavy. Maintenance costs are slashed. Rustproof aluminum never requires painting. Sturdy construction assures longer, trouble-free service. Damaged parts are easily replaceable, with no special tools required.

From every standpoint the most critical analysis shows that the AA Trailmobile is the highest net profit maker on the highway today.

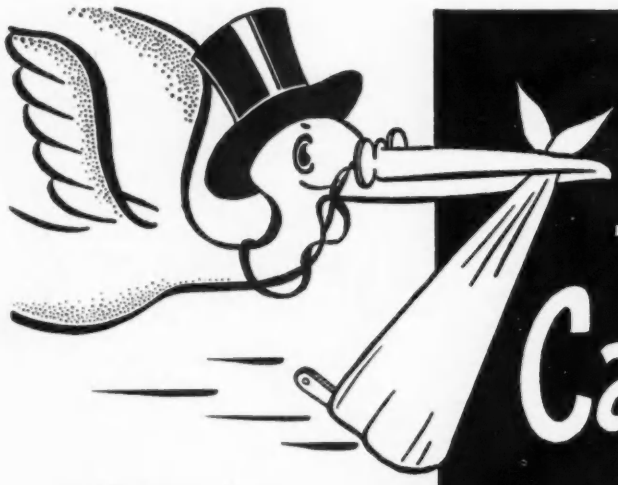
It will pay you to call your nearest Trailmobile Representative for full details of this sensational Trailer value.

The new AA Trailmobile is an entirely new trailer — not just a change of models with a few new features. Every factor from the suspension up is different and better. Yet its performance record has already been proven in time-tested road operations.

TRAILMOBILE

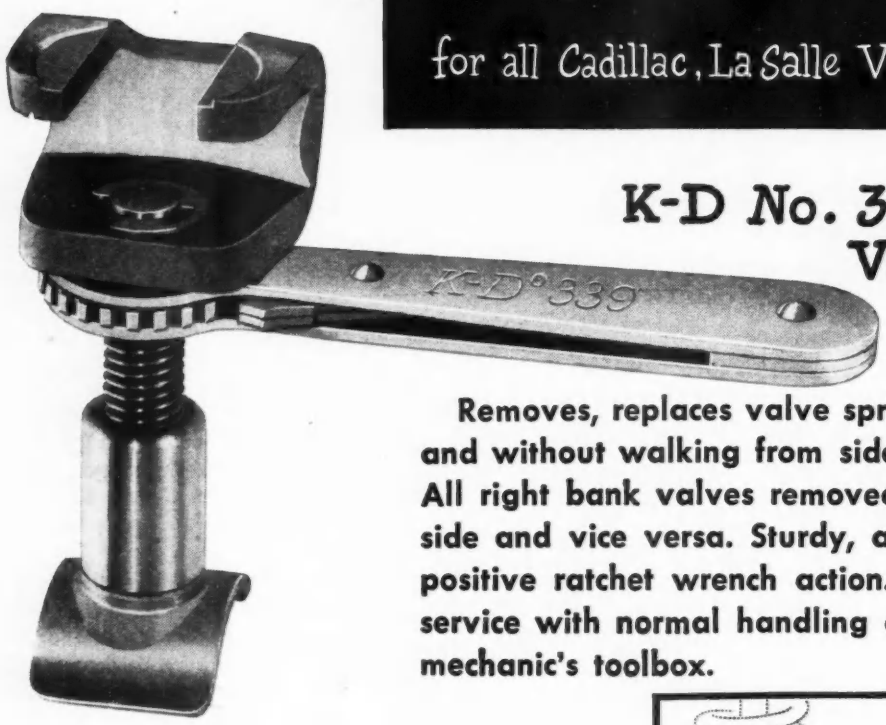
THE TRAILMOBILE COMPANY

CINCINNATI 9, OHIO BERKELEY 2, CALIFORNIA



Another New K-D® Cadillac Lifter

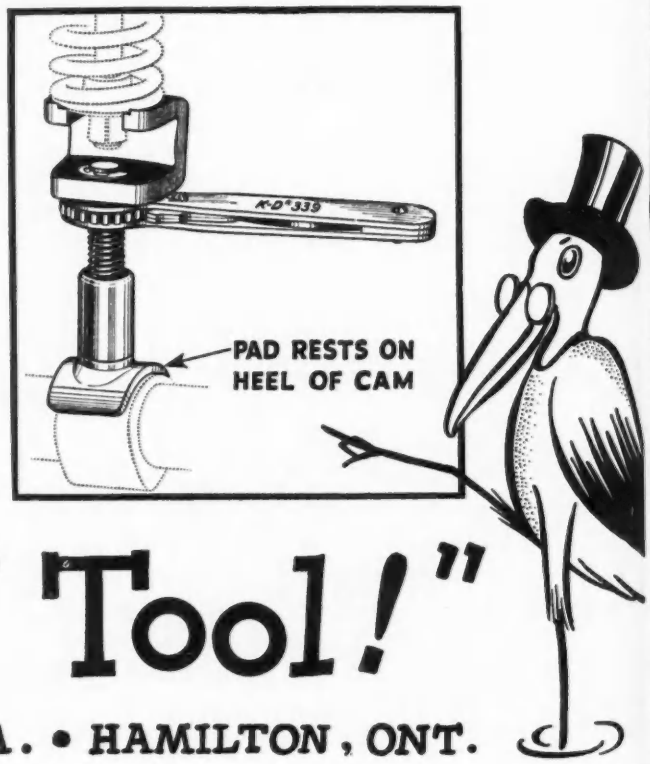
for all Cadillac, La Salle V-8 motors since '35



K-D No. 339 Valve Spring Lifter

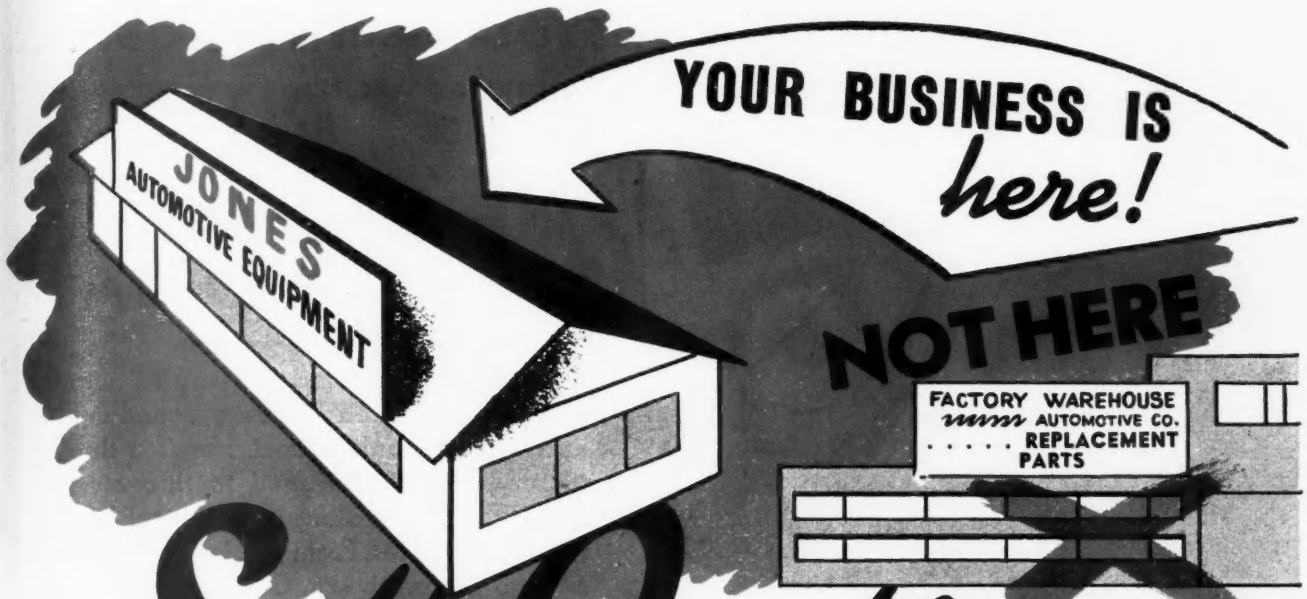
Removes, replaces valve spring retainers with safety and without walking from side to side for each valve. All right bank valves removed while standing on left side and vice versa. Sturdy, all-steel construction with positive ratchet wrench action. Will give a lifetime of service with normal handling care. A hustler for every mechanic's toolbox.

Fast, simple operation. After lifter assemblies removed, turn cam shaft until heel is on top. Curved pad of lifter rests on heel of cam. Set ratchet to raise, work handle back and forth until spring raised to height desired. Automatic locking. Reverse ratchet action to lower spring and proceed to next valve. Replace spring by repeating operation. Replace retainers with speedy K-D No. 605.



"It's a K-D® Tool!"

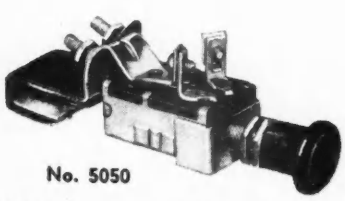
K-D MFG. CO., LANCASTER, PA. • HAMILTON, ONT.



Sell Quality

COLE-HERSEE ORIGINAL REPLACEMENT PARTS

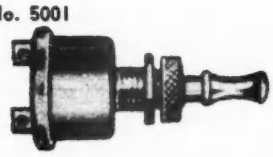
AND *protect your business!*



No. 5050

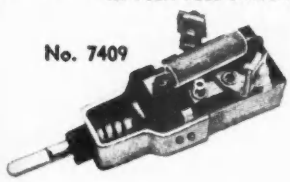
COLE HERSEE for HEAVY DUTY SWITCHES

No. 5001



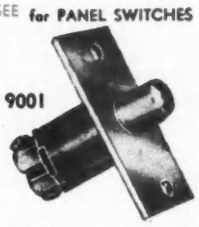
COLE HERSEE for PUSH PULL SWITCHES

No. 7409



COLE HERSEE for PANEL SWITCHES

No. 9001



COLE HERSEE for DOOR SWITCHES

When you sell Cole Hersee equipment, you build your own reputation because you handle the finest. Cole Hersee products are guaranteed for quality and ruggedness, — engineered for performance and dependability. Cole Hersee replacement switches meet the specific requirements of leading car manufacturers and are constructed to SAE standards. They are original equipment. Built in America's most modern factory, the name Cole Hersee on original replacement automotive equipment is your guarantee of top quality. Sell with Confidence — Sell Cole Hersee.

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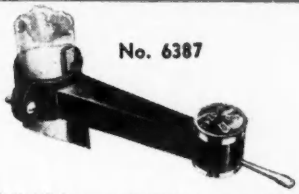
Headlamp Switches	Plugs	Directional Switches
Starter Switches	Sockets	Toggle Switches
Heater Switches	Accessories	Push-Pull Switches
Panel Switches	Fuse Blocks	Headlamp Switches
Trailer Connectors	Dash & Pilot Lights	Foglight Switches

COLE-HERSEE Company

20 Old Colony Ave., Boston 27, Mass.



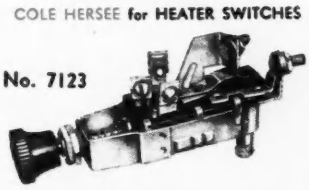
No. 6387

COLE HERSEE for DIRECTIONAL SWITCHES

Moderne

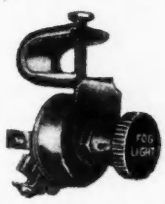
COLE HERSEE for HEATER SWITCHES

No. 7123



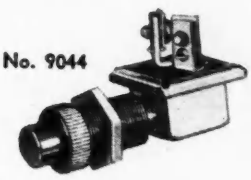
COLE HERSEE for HEADLAMP SWITCHES

No. 2416



COLE HERSEE for FOGLIGHT SWITCHES

No. 9044



COLE HERSEE for STARTER SWITCHES

GILLETTE SUPER-RIBBED

Special shoulder design throws off the heat. Special shock shields absorb sudden impact, guard against blowouts. Super Ribs keep hauling cost to a minimum, help meet schedules on time.

YOU NAME THE JOB...

GILLETTE

HAS THE TIRE

...and at lower cost per mile!

Profits roll in when trucks keep rolling. Gillette tires are one sure way to help maintain time and delivery schedules at minimum hauling cost. Here's a line of rugged tires designed to throw off heat faster, give long, smooth-rolling, fuel-saving miles. From the long haul to stop-go city delivery, Gillette tires will do a better job. See your friendly, helpful Gillette dealer today.

GILLETTE SUPER DELIVERY

With new, improved rayon construction for greater strength and less heat per ply. 25% more tread depth wears evenly, slowly, gives added protection against blowouts and punctures. You'll get up to 45% more miles at normal speeds.

GILLETTE CONSTRUCTOR

Here's a tire that will carry the most massive loads. 60% greater tread depth withstands the most bruising wear. Self-cleaning lugs give sure traction. Shock shield construction gives extra inner strength. You get more power efficiency at low operating and maintenance cost.

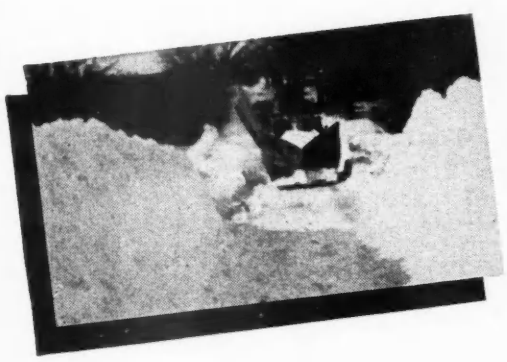
GILLETTE TIRES

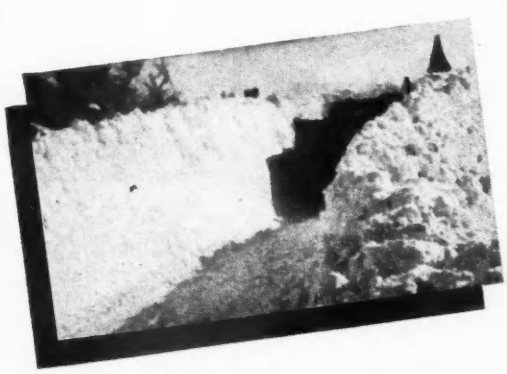
A BEAR FOR WEAR
GILLETTE TIRES
DIVISION OF UNITED STATES RUBBER COMPANY

DIVISION OF UNITED STATES RUBBER COMPANY

MODEL W2008

DRIVEN BY 200 H. P. DIESEL ENGINES





Thirty years of engineering development have given OSHKOSH trucks:

1...**the power to keep winter highways open.**

2...**the *stamina* to stand up through many years of this battering work with minimum upkeep.**

3...**the flexibility for efficient, economical year-around work—construction, maintenance and heavy hauling, on or off the highway.**

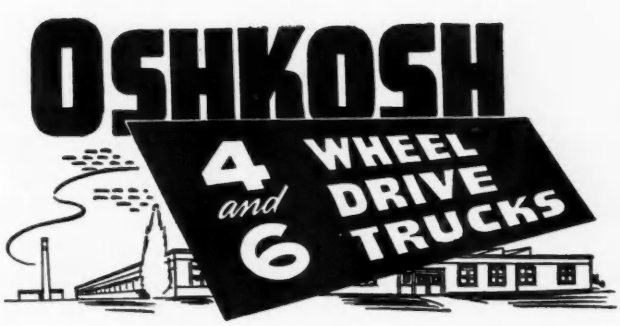
Ask any Oshkosh user.

Write for descriptive literature.

Service Stations at Convenient Points in U. S. and Canada.

OSHKOSH MOTOR TRUCK INC., Oshkosh, Wis.

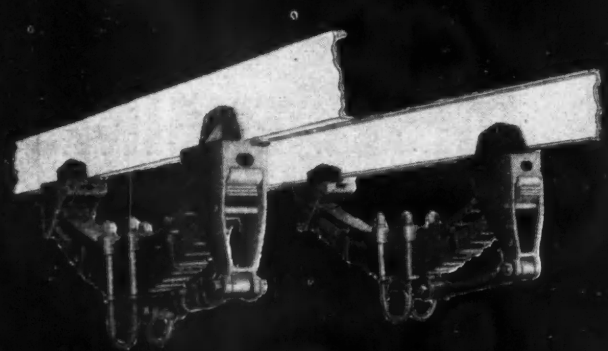
CABLE ADDRESS: "OSHMOTOR" OSHKOSH



TURN

TO Standard AND Build up Payloads!

UTILITY
DUAL AXLE UNITS



Single Spring Suspension

Fleet Owners, private operators, and trailer manufacturers everywhere are reaping new and larger profits from increased payloads on trailers equipped with Standard Dual Axle Units. Join them now and save with these proven advantages:

No Wheel Bounce
Better Braking
Lighter Weight
Less Maintenance

• • •

Standard's Single Axle Spring Suspension makes light work of axle assembly problems. Serves high or low frame trailers. Straight-line spring and radius rod set-up gives easy pulling without rod bending. No parts removed for axle alignment. Spring and helper spring capacities ample for maximum load.

•

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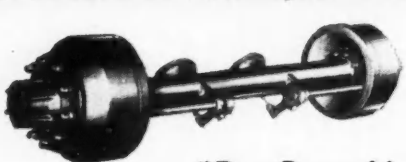
WAREHOUSE
201 Southeast Washington St.
PORTLAND, OREGON
C. G. King, Manager



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TRUNNION AXLES

BRAKES

"Be Sure Your Axles are Standard"

Write *today* for complete engineering data!

Manufactured By

Standard Forge & Axle Company Inc.

MONTGOMERY 2, ALABAMA

The WORLD'S LARGEST MOTO-CRANE

The *Lorain* MC-820 Moto-Crane has two WAUKESHA Super-Duty DIESELS (Model WAKD) six cyl., 6¼ x 6½ in., 1197 cu. in. displ. One engine propels the rubber-tired carrier which transports the unit (weight 65 tons) at 18 m.p.h. The second Waukesha Diesel installed in cab of crane (as shown below) powers revolving turntable, hoist, swing and boom derricking; supplying power to lift loads up to 90,000 lb.

lifts and transports up to 45 Tons with its two WAUKESHA *Diesel* ENGINES

• New fields in heavy material handling by mobile equipment, are being opened by this giant, rubber-tired two-engined crane. Said to be the world's largest, the first of these Waukesha-Diesel-powered Lorain MC-820 Moto-Cranes is working in the world's largest steel mill. It has a safe-rated lifting capacity of 45 tons (90,000 lb.) at a 12-ft. radius. Thirty years ago when Thew built the first portable crane—also a Waukesha-powered Lorain—its capacity was only 3½ tons. The latest Lorain's ability to lift and transport far heavier loads than any previous portable crane, extends the basic advantages of the moto-crane for handling heavy material in steel mills, steel erection, ship and bridge building, oil fields, logging and many other industries.

A crane is no better than its engines. With their 30 years of motorized crane experience, Thew Shovel Company engineers chose two big Waukesha Super-Duty Diesels to power the world's largest moto-crane. Waukesha Diesels are winning recognition everywhere as the world's finest power plants of their size and type. Get Bulletin 1415.

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NEW YORK • TULSA • LOS ANGELES

SPECIAL..FOR SMALL WORK!

Herbrand Van Chrome

MIDGET ¼" SQUARE DRIVE SOCKET AND SMALL NUT TURNING SET

You wouldn't use a butcher knife to peel an apple—and it's even more inefficient to try to do delicate precision wrenching operations with cumbersome, awkward tools. The MA-50½ Midget Socket Set is carefully planned to take care of popular sizes of small nuts used on carburetors, generators, distributors and other small automotive parts. In addition to this it is especially adaptable to home appliances such as refrigerators, radios, etc.

Small, light in weight yet strong, the Herbrand Midget Socket Set is engineered for utmost speed and ease of handling. A compact, precision-made set to complete your hand tool assortment.

Order from your HERBRAND JOBBER or write us for details

HERBRAND DIVISION THE BINGHAM-HERBRAND CORP. FREMONT, OHIO

Contents:

Ten Hot Forged Midget Sockets with openings ranging from $\frac{3}{16}$" to $\frac{7}{16}$". Three Midget ¼" Drive Handles: Spinner, Sliding T, and 4½" Extension. Fitted in metal box. Weight 15 oz. Other Midget Socket Sets are also available.

Herbrand
SUPER-QUALITY TOOLS
..the finest money can buy!

THIS BOOKLET TELLS YOU

If you buy, specify, sell or operate trucks or buses, you will want the latest information on TRU-STOP Emergency Brakes.

Here it is. Here are the essential facts in easy-to-read form—without ballyhoo or high pressure selling. If you do not have your copy, send for it today. Write our Detroit office.

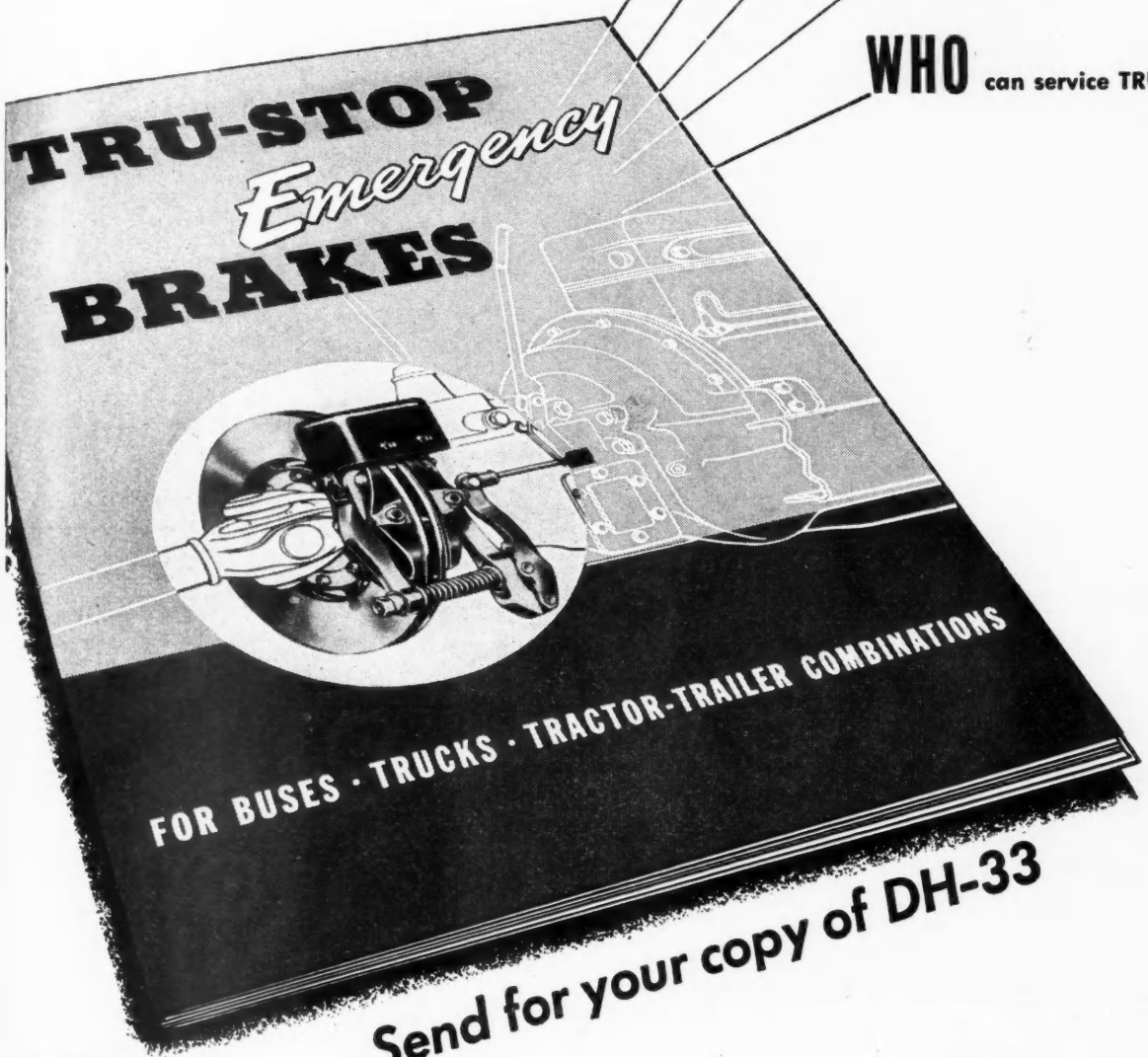
WHY TRU-STOP is safer — Page 3

HOW TRU-STOP cools itself — Page 5

WHERE TRU-STOP saves money — Page 7

WHEN TRU-STOP is a "must" — Page 10

WHO can service TRU-STOP — Page 11



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AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

In Business for Your Safety

TRU-STOP *Emergency* BRAKES

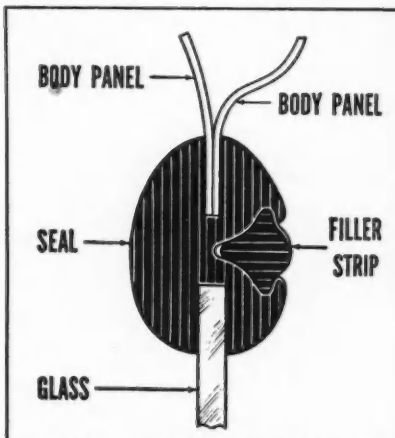
Look! It's a Cinch!

Replacement cost is *way down* and weatherproofing is *permanent*

With replacement of cracked or broken windows and windshields a "must," the time-and-labor cost is a vital factor. And costwise, there's no comparison between replacing the ordinary way and with Inland's Self-Sealing Weather Strip.

Ordinary replacements usually demand two men, plus much time in preparation, sub-assembly, reworking and cleanup. But that's not the Inland way. No cement is used. The Inland seal goes into the panel opening—the glass into the seal—and the Inland Filler Strip into the locking channel with a fast zipper-like motion. (See fully detailed diagram at right.)

It's a one-man operation, and very fast, slashing replacement cost. And it's a one-time job—permanent weather-sealing, leak-proof under all conditions. Always specify Inland Self-Sealing Weather Strip as original equipment. It will save you money.



See how easy it is? The seal goes readily onto the body panel. Then the glass fits into the seal. Then the filler strip is zipped into the locking channel. That window or windshield, and all the rest of them, are weatherproofed *for keeps.* Simple, easy, fast, economical!

INLAND MANUFACTURING DIVISION
GENERAL MOTORS CORPORATION **DAYTON, OHIO**

INLAND MANUFACTURING ***Self-Sealing Weather Strip*** *(PATENTED)*

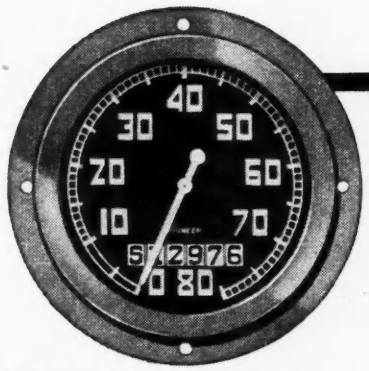
ECLIPSE-PIONEER

presents the precision instruments you have been waiting for!

aviation quality

SPEEDOMETERS and TACHOMETERS

with optional ODOMETER



Over 400,000 Miles of Service-Free Operation

What a performance record! Almost half a million miles of accurate speedometer operation without service or maintenance. That's the record written by the new Eclipse-Pioneer* Electric Speedometer for one of America's largest bus operators. It adds up to extra profitable miles of operation—fewer costly shop hours.

The New Eclipse-Pioneer Odometer

The Eclipse-Pioneer Odometer records R.P.M.s when used with the Tachometer and acts as a precision mile totalizer with the Speedometer. It is completely enclosed in the indicator, and does not require any additional connections. The Odometer is simple in construction, highly accurate, and free of any inherent characteristics which might cause maintenance costs over long periods of service life.

Over 30 Years of Aircraft Experience

Eclipse-Pioneer Electric Tachometers are built to exacting aviation standards of accuracy and performance. That's why they can be counted on for precise, trouble-free operation day after day, mile after mile.

Efficient bus or truck operation, day in and day out, is largely dependent on engine operating conditions. One of the surest safeguards to maintaining top engine performance, is to eliminate overspeed conditions. Eclipse-Pioneer Aviation Quality electric instruments give engine or vehicle speed to your operator with absolute accuracy, for his most efficient use of the engine. And, with Eclipse-Pioneer's precision Odometer, you have a complete history of engine or vehicle service as a sure guide on periodic overhauls. For better bus efficiency, for longer truck operation, check these new aids to top performance.

*TRADEMARK

ECLIPSE-PIONEER

TETERBORO, NEW JERSEY *DIVISION OF* Bendix AVIATION CORPORATION

Export Sales: Bendix International Division
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PERFORMANCE GOES UP IN SMOKE . . .

"It isn't a Volcano, MAX-

HE NEEDS FEDERAL-MOGUL ENGINE BEARINGS"

REPLACE WORN CONNECTING ROD BEARINGS TO RESTORE ENGINE PERFORMANCE

When connecting rod or crankshaft bearings are worn, the engine performs like a skier with a broken leg. Excess oil reaches combustion chambers, where it burns to carbon on pistons, rings, valves and spark plugs. To send engine performance and operator satisfaction zooming up like a free ride on the ski-lift, replace worn engine bearings with Federal-Mogul Oil-Control Bearings. They're *engineered* for the job of oil control! FEDERAL-MOGUL SERVICE (Division of Federal-Mogul Corporation), COLDWATER, MICHIGAN.

Replace in Sets with Genuine

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Oil-Control Bearings

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The Complete Line—Almost 7,000 numbers:

Engine Bearings • Bushings • Connecting Rod Exchange • Reconditioned Connecting Rods • Rebabbitted Connecting Rods • Connecting Rod Bolts and Nuts • V-seam Piston Pin Bushings • Bearing Metals • Laminated Shims • Solders.

America's Choice

CHEVROLET ADVANCE-DESIGN TRUCKS

for All-Around Value!

Ask the experts—

If you ask the drivers, they'll say:

"Chevrolet Advance-Design Trucks can and will take it day after day, month after month. They're easy to handle . . . built with driver safety and comfort in mind."

The mechanics insist:

"Chevrolet trucks last longer because they're designed, engineered and built for the job. They're easier to work on . . . built with an eye to economical maintenance."

The owners will tell you:

"Only Chevrolet has the TRIPLE ECONOMY of low cost operation . . . low cost upkeep . . . and the lowest prices in the entire truck field."

CHEVROLET MOTOR DIVISION, *General Motors Corporation*, DETROIT 2, MICHIGAN

Only the Leader—Chevrolet has all these features:

NEW CHEVROLET 4-SPEED SYNCHRO-MESH TRUCK TRANSMISSION

A special feature in one-ton and heavier duty models that assures new operating ease and efficiency.

THE CAB THAT "BREATHES"

Here are the trucks with the famous cab that "breathes"! Outside air is drawn in and used air is forced out! Heated in cold weather.*

FLEXI-MOUNTED CAB

Chevrolet's Advance-Design Cab is mounted on rubber, cushioned against road shocks, torsion and vibration.

IMPROVED VALVE-IN-HEAD ENGINE

The world's most economical engine for its size now has greater durability and operating efficiency.

SPLINED REAR AXLE HUB CONNECTION

Greater strength and durability in heavy-duty models with this exclusive Advance-Design feature.

PLUS Uniweld, all-steel cab construction • New, heavier springs • Full-floating hypoid rear axles on ¾-ton and heavier duty models • All-round visibility with rear corner windows* • Specially designed brakes • Hydrovac power brakes on two-ton models • Ball-bearing steering • Double-line pre-selective power shift in 2-speed axle at extra cost on two-ton models • Wide base wheels • Standard cab-to-axle-length dimensions • Multiple color options.

**Heating and ventilating system and rear corner windows with de luxe equipment optional at extra cost.*

CHOOSE CHEVROLET TRUCKS FOR TRANSPORTATION UNLIMITED

CHEVROLET

PROVED

across the nation for almost 3 years

HERE'S MORE POWER TO YOU!

There are no other time-tested A-C Systems that will give you performance like this!

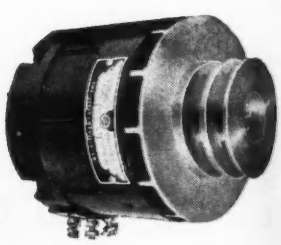
- Alternator systems can provide 50 amperes (or more) with engine idling and full output at all driving speeds to keep batteries fully charged while supporting the unlimited use of accessories.
- Weigh 60% less than D-C equipment of comparable rating.
- Require less space and less support.
- Require less maintenance and operate with less danger of burnout because Alternator has no commutator with commutating brushes or no rotating armature windings to cause sparking.
- Eliminate radio "fade out" and range reduction caused by weak batteries—hold radio noise level to an absolute minimum and prolong life of radio equipment.

THE LEECE-NEVILLE COMPANY ELECTRICAL EQUIPMENT CLEVELAND · OHIO, U.S.A.

THE ORIGINAL HIGHER-OUTPUT A-C GENERATING SYSTEMS KEEP BATTERIES UP —COSTS DOWN . . . SUPPORT MORE ACCESSORIES!

Way back in March, 1946, Leece-Neville introduced its now-famous, HIGHER-output A-C Generating Systems without fanfare. Today, almost three years later, installations on trucks and other vehicles operating under all types of conditions in all parts of the country have conclusively proved three things: 1. These systems keep batteries up; 2. These systems keep costs down; 3. These systems support the use of more accessories. If such *proved* advantages interest you . . . see your nearest Leece-Neville Service Station or write *The Leece-Neville Company, Cleveland 14, Ohio.*

THIS ALTERNATOR is the heart of the popular Leece-Neville A-C Generating System rated at 14 volts—100 amperes. Other 14-volt systems rated at 60, 80 and 150 amperes. For 6-volt circuits, there is a 45-ampere system (convertible to 60) and an 80-ampere system.



LEECE-NEVILLE

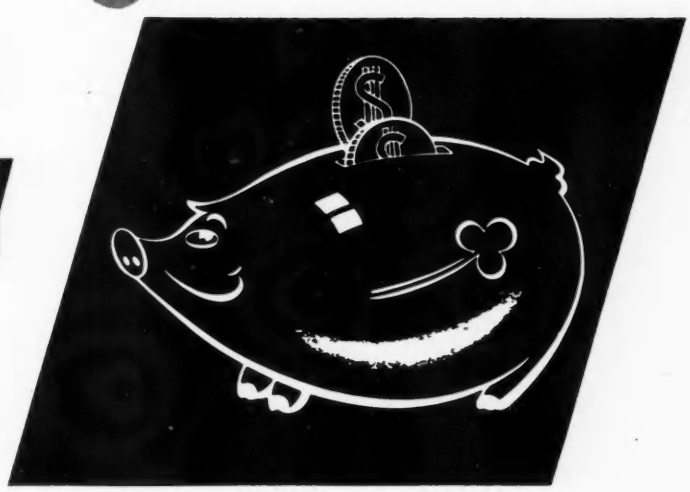
Pioneer and STILL Quality Leader

CRANKING MOTORS • GENERATORS • VOLTAGE REGULATORS • SWITCHES

the SAVINGS in LOWER "PER PACKAGE" delivery costs by using

YORK-HOOVER designed BODIES is just like EXTRA MONEY in the BANK

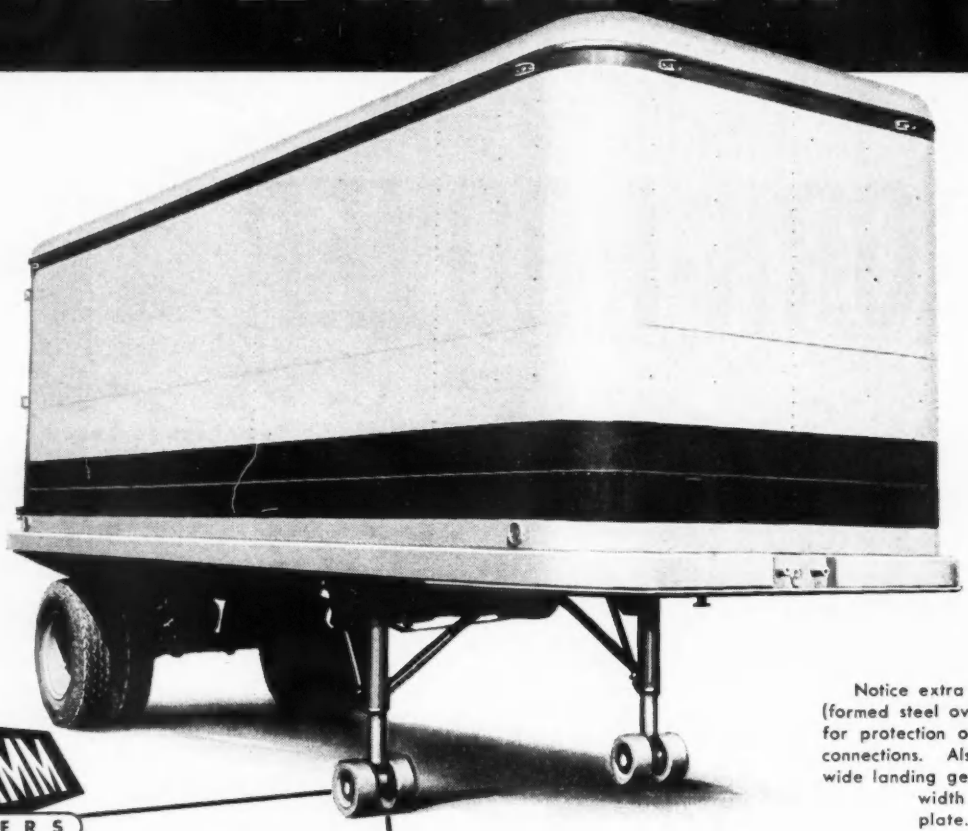
Savings in lower "per package" delivery cost contribute profits to *your* fleet operation when you use York-Hoover designed bodies. The reason for this is plain. It's the result of an *experienced study* of *your* particular needs plus *sound engineering* and *honest craftsmanship;* factors which make York-Hoover Bodies a profitable investment for you.



YORK-HOOVER BODY DIVISION CORPORATION

YORK, PENNSYLVANIA

"WORK-HORSE" TRAILER



Notice extra thick base rub rail (formed steel over solid hardwood) for protection of body and brake connections. Also note the extra wide landing gear spacing and full width upper fifth wheel plate.

GRAMM TRAILERS

LET GRAMM SOLVE YOUR SPECIAL TRAILER REQUIREMENTS

Many operators have specialized hauling problems which can be solved best by a custom engineered and built trailer. GRAMM is superbly equipped to meet such specialized trailer needs. GRAMM has been producing custom trailers for many years . . . has the engineering and production "know how" to solve difficult problems at surprisingly low cost.

It will pay you to bring your special transport requirements to GRAMM. There's no obligation. And you may be surprised to learn how little it costs to obtain just the special type trailer you need to increase profits.

● From every standpoint, this "work-horse" GRAMM door to door pick-up and delivery trailer is built to "take it"! Extra heavy construction throughout to withstand practically any abuse and overcome ordinarily high maintenance costs. This GRAMM van is designed especially for localized service where its weight is no handicap . . . and its ability to take punishment pays off. It's the roughest—toughest trailer you've ever seen! Get all the facts on this van now if your operation includes local pick up and delivery service.

GRAMM

A NAME FAMOUS FOR HIGHEST QUALITY IN TRANSPORT EQUIPMENT

GRAMM TRAILER CORP.
DELPHOS, OHIO

SOLD BY LEADING INDEPENDENT DISTRIBUTORS AND DEALERS

. . . but are you carrying a "rider" in the back?

IF YOUR trucks and trailers are *not* made of aluminum . . . then you certainly *are* carrying a "rider" in the back!

That rider's name is *dead weight*. Dead weight that can nick your cash register for as much as *two tons of payload* on every unit!

Toss out this dead weight and turn it into payload—by switching to bodies built with light, strong Kaiser Aluminum—and it's obvious that you push up profits!

And you push *down* maintenance costs at the same time. For with Kaiser Aluminum you eliminate painting. You hold repairs to a minimum, and they can be made easily and economically. And you protect cargoes in case of accident, because of Kaiser Aluminum's high tensile strength combined with its resiliency.

What's more, bodies made with Kaiser Aluminum are assured of extra long life—can't ever rust, rot, or warp.

A Permanente engineer can show you even more ways you can profit by switching to bodies built with Kaiser Aluminum. Simply call any office listed below.

Permanente Metals

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Kaiser Aluminum

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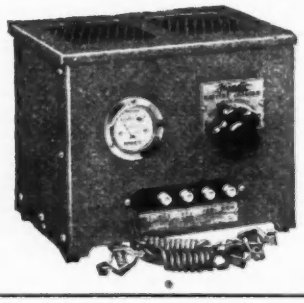

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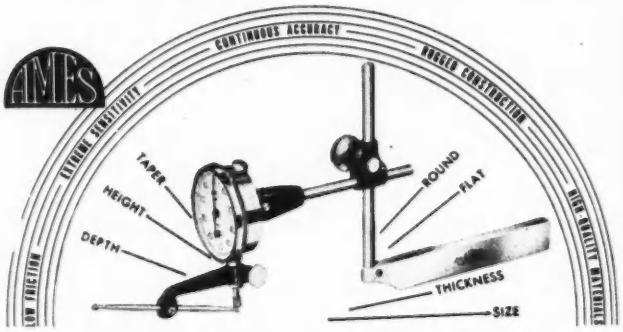

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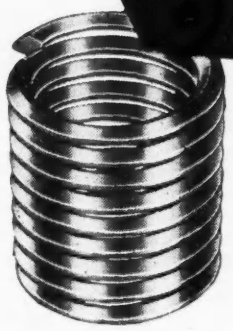

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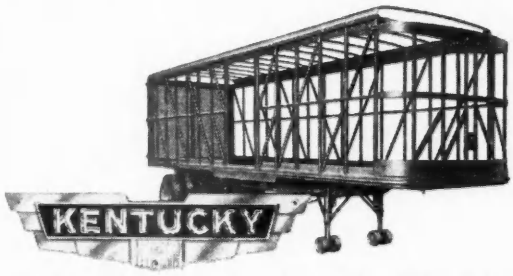

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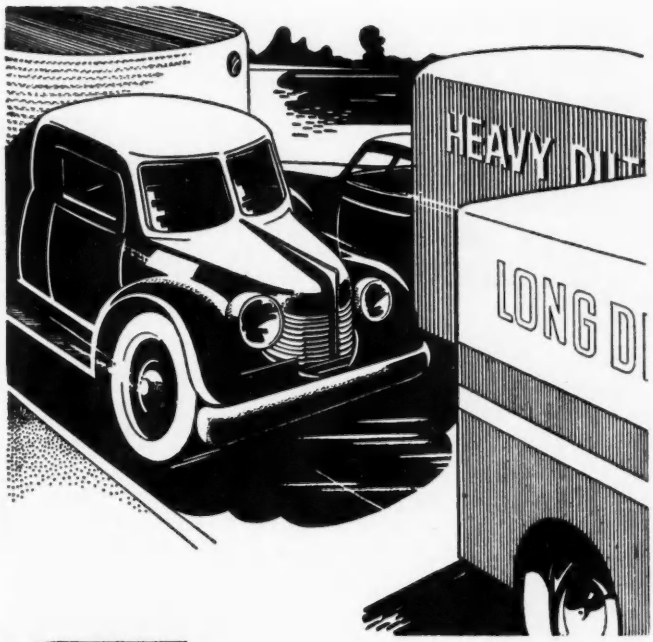

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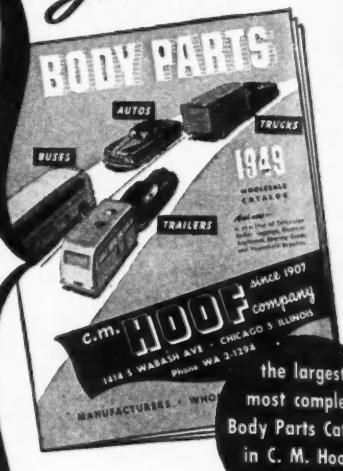

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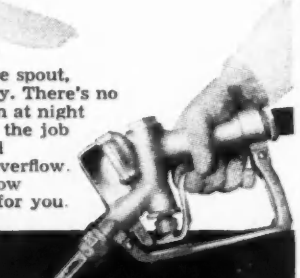

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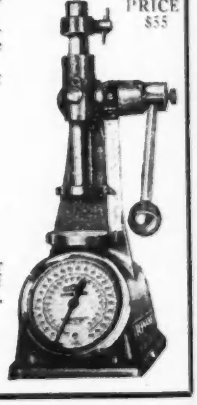

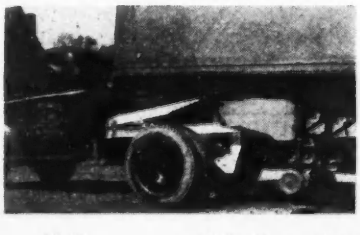

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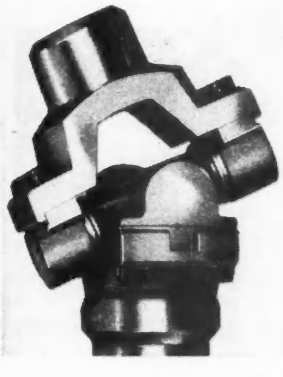

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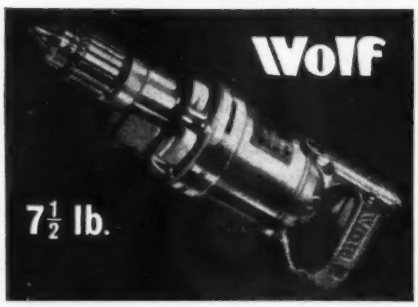

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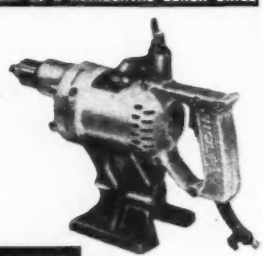

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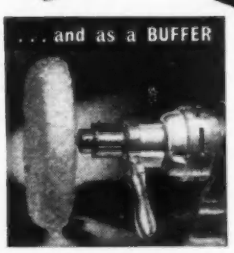

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CCJ Newscast

Continued from Page 182

FRONT WHEEL BRAKE TESTS SHOW GOOD AND BAD EFFECTS

Results of preliminary tests at Pine Lake, Wis., to evaluate the good and bad effects of front wheel brake operation particularly on slippery surfaces, were announced by the National Safety Coucil just as this issue went to press.

While more complete details, including charts and a discussion of the limitations of the tests, will be published in the March issue, the following basic conclusions will give fleetmen an insight into the thinking of the committee to date. They can be summarized as follows:

1. All of the test vehicles could stop, without losing steering control, on the dry level pavement straightaway and the glare ice straightaway in a *shorter distance when the front wheel brakes were on.*

2. The two-axle straight trucks could stop, without losing steering control, on either the dry level pavement straightaway, glare ice straightaway, or glare ice curve in an *appreciably shorter distance when the front wheel brakes were on.*

3. The four-axle truck full-trailer combination equipped with air-mechanical brakes could stop on the dry level pavement straightaway in *almost as short a distance when the front wheel brakes were off as when they were on.*

U.S. Pat. No. 2,093,547 — Canadian Pat. No. 223,568
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4. The loaded three-axle straight truck and all of the combination vehicles tested on ice could stop on the glare ice curve *in a shorter distance when the front wheel brakes were off.* There were definite indications that these test vehicles could not be controlled on the curve with the front wheel brakes in operation as well as they could with the front wheel brakes disconnected.

The researchers felt that the evidence was conclusive in the case of the two-axle straight trucks, and that this type should be eliminated from future investigations. Front wheel brakes gave better stopping and steering control under all conditions.

The results also indicated that some of the test vehicle combinations could operate without front wheel brakes with little loss of stopping ability on the straightaways and with a definite improvement in performance on slippery curves. Further tests on these types of vehicle appear justified.

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Illustration shows one truck-model mirror at 3 angles, 3 lengths.

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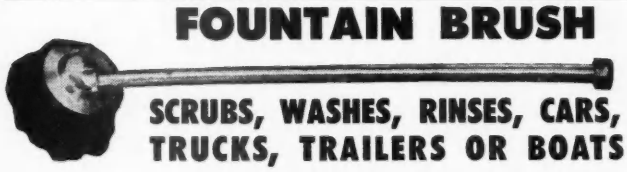

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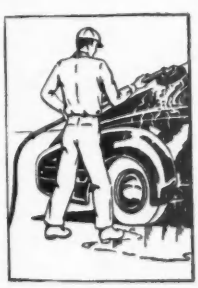

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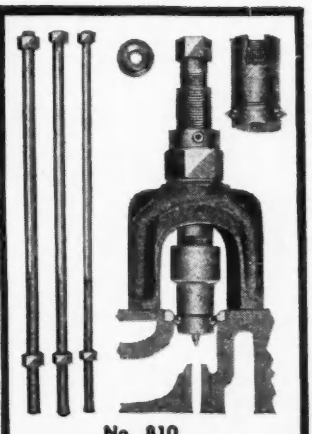

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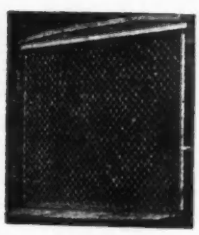

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DETREX Corp.
DETROIT 32, MICHIGAN

Trailer Standards

Continued from Page 96

ings, brake springs, brake cam bearings and other frequently used parts.

In a formal resolution, the convention assured cooperation of the trailer builders on matters of safety and more efficient vehicle operation with the organizations named by Mr. Snead.

Richards: "Performance"

KARL M. RICHARDS, manager, Motor Truck Division, Automobile Manufacturers Association, declared there must be a cooperative effort to "turn off the dripping taps of public irritation." One way, he suggested, would be to cooperate in the building of highways that will relieve congestion in urban areas as well as on intercity arteries.

Predicting that "performance ability of vehicles" will be an increasingly live subject on which all interests should work together, Mr. Richards said: "The trailer manufacturing industry must be particularly interested in this matter for it is against the tractor-trailer combination rather than the straight truck that complaints

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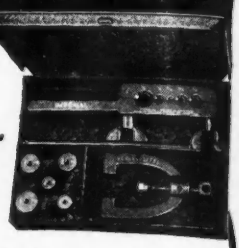

● Ideal for brake, gas and oil line work. Overcomes tendency of welded steel tubing to crack when flared with ordinary flaring tool. First, tubing is belled, Fig. 1. Then flared in conventional manner, Fig. 2.

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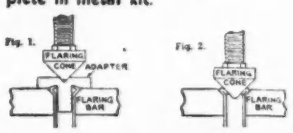

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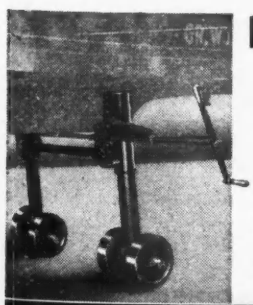

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of slow hill-climbing and slow acceleration most frequently are directed."

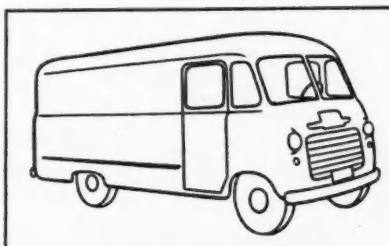
Hardy: "More Steel"

AN assurance, as welcome to fleet operators as to the assembled trailer builders and their suppliers, that "there will be more steel in 1949, perhaps enough to satisfy all users," was given by Eugene J. Hardy, chief of the Washington Bureau of *Iron Age* and the COMMERCIAL CAR JOURNAL. Whatever deficit may occur in steel supply, he declared, "will be concentrated in only a few segments of the economy such as the oil and gas industry, railroad transportation and the passenger car industry." Even in the latter any deficit will be relative since the automobile industry expects enough metal to be available to permit a 10 per cent increase in vehicle output this year.

Lucas: "54,000 Units"

LIKEWISE foreseeing no difficulties in obtaining adequate supplies of materials and components, E. J. Lucas, sales manager, Kingham Trailer Co., predicted that trailer business will be 15 to 20 per cent better this year than last. He said that the gain

(TURN TO NEXT PAGE, PLEASE)



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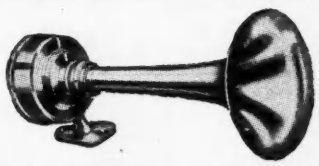

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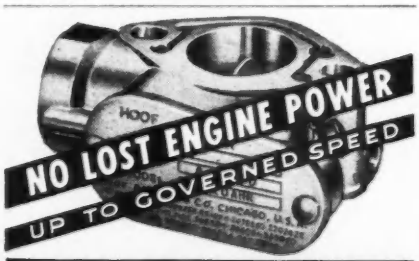
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Trailer Standards

Continued from Page 229

for this year will put production at about 54,000 units, compared with 45,000 in 1948, 53,000 in 1947 and 42,000 in 1941.

"We have a better job to do and we can do a better job," Mr. Lucas said. "But this will require a cooperative spirit within the industry and among its suppliers."

Schotters: "Fair Play"

F. A. SCHOTTERS, operations vice president of The Trailmobile Co., said "Production can go forward unmarred by bickering if both sides —management and labor—work together. At the base of the relationship must be fair play—human relations."

Rogers: "Excellent Year"

HARRISON ROGERS, vice president of Rogers Bros. Corp., also advanced the belief that 1949 would be an excellent one in his report as president of TTMA. As reasons for this belief he pointed to an all-time record high in truck-loadings, to the possible remaking of our transportation pattern by F.O.B. mill pricing and the recommended dispersal of plants for security reasons.

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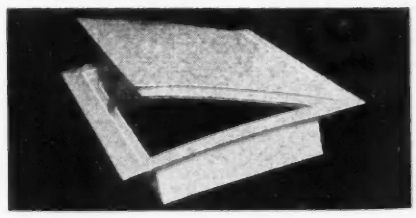

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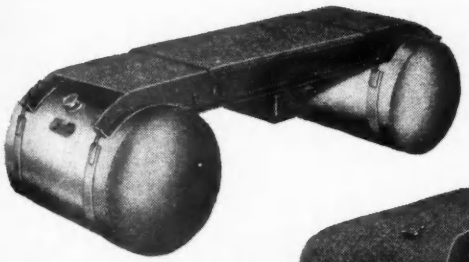

Snyder Safety Cylinder Tank and Tool Box Units use up wasted space by providing storage for tools, chains, power jacks, danger flags, etc. The jackwell is upright to prevent possible escape of jack fluid.

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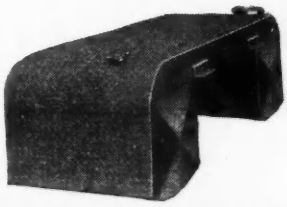
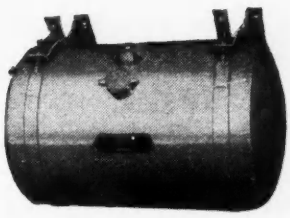


Snyder Safety Saddle Tanks occupy wasted space between the cab and fifth wheel. The top deck plate provides a safer means of crossing the chassis and carrying material, hose lines and spare tires. Fuel capacity of 75 to 150 gallons.



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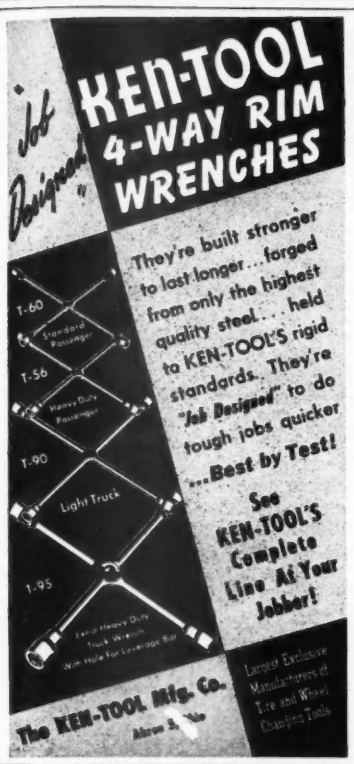
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Horton: "Finance Problems"

H. D. HORTON, chairman of the board, Associated Transport, Inc., and president of the American Trucking Associations, Inc., said the Federal government's policy of tightening bank credit to curb inflation will create new financing problems for the trucking industry, which is already hampered by its inability to obtain low-rate, long-term financing for equipment purchases. He commended the trailer industry for making "our problems your own."

Resolutions

AMONG the resolutions adopted by the convention was one which put truck-trailer manufacturers on record as opposed to haphazard spending and tax gouges for highways, and which expressed the view that any spending for highways should be based on scientific fact and impartial research rather than arbitrary curtailment of vehicle size and weight limits.

New Officers

Officers and directors elected are as follows:

President, Harrison Rogers; eastern vice-president, W. E. Grace (Hobbs Mfg. Co.); western vice-president, John C. Bennett (Utility Mfg. Co.); treasurer, C. A. Persinger (Wilson Trailer Co.).

Directors — L. C. Allman (Fruehauf Trailer Co.), Julius L. Glick (Truck Engineering Corp.), Christopher Hammond, Jr. (Steel Products Co.), R. R. King, (American Body & Trailer, Inc.), S. F. Kromkowski (Edwards Iron Works), L. A. Myers, Jr. (Black Diamond Trailer Co.), F. A. Schotters (Trailmobile), R. C. Tway (Kentucky Mfg. Co.), and E. J. Ziegler (Keystone Trailer & Equipment Co.).

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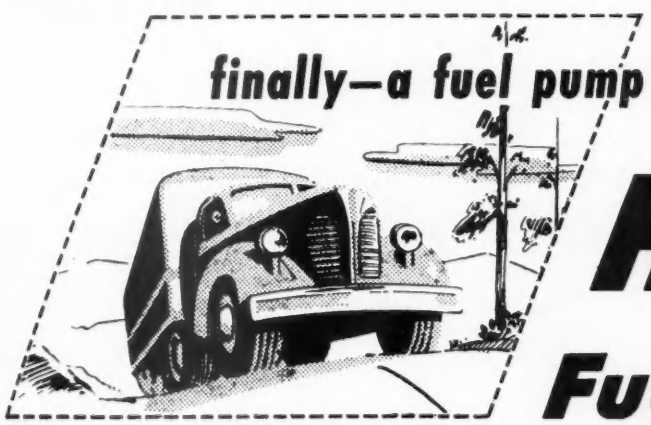

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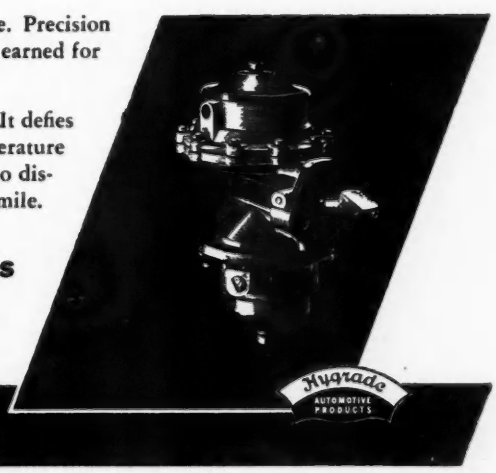

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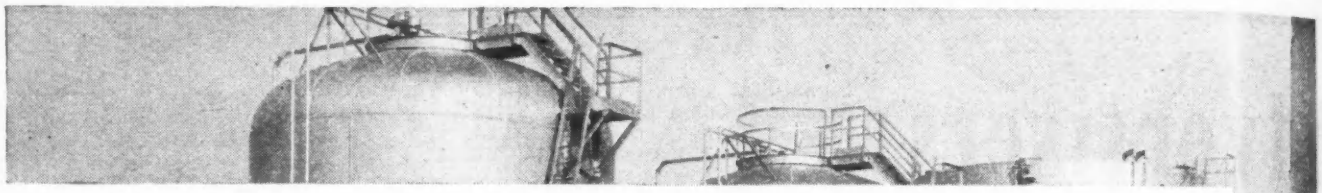
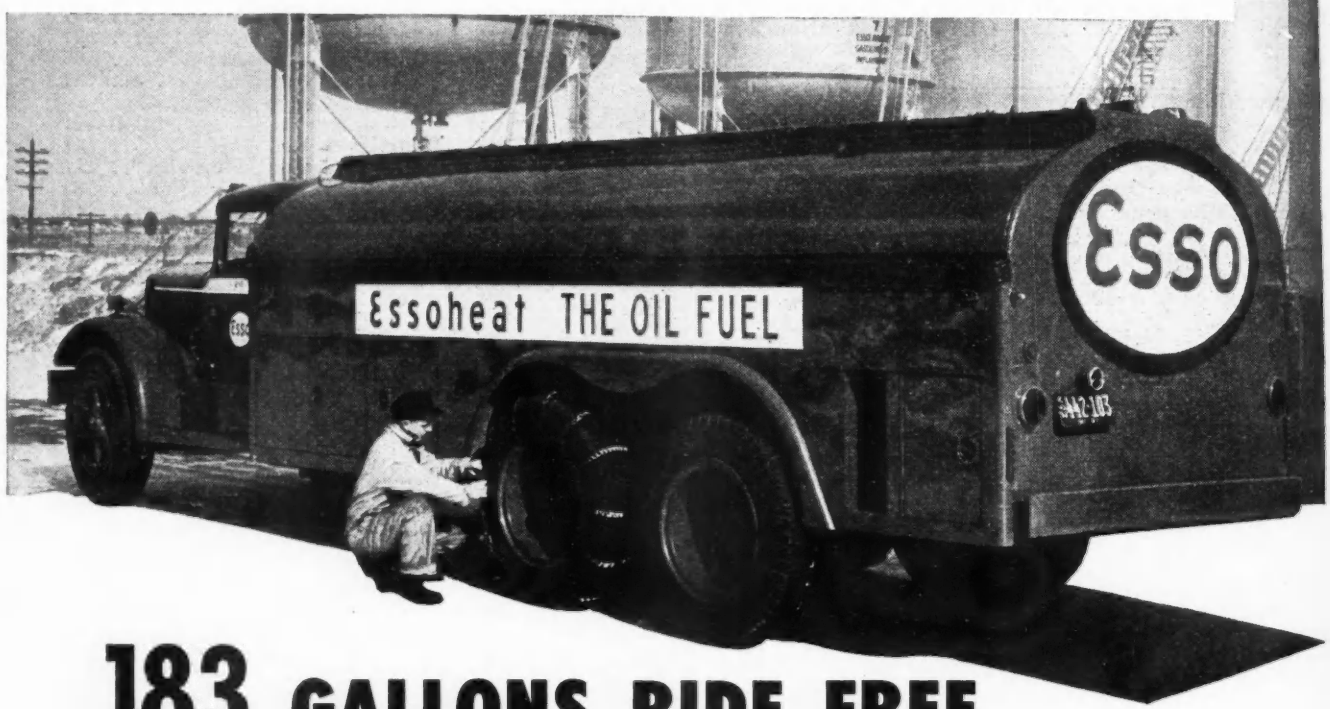
carburetor kits and parts
complete line of fuel filters

HYGRADE DIVISION • Standard Motor Products, Inc.
35-35 Thirty-Fifth Street, Long Island City 1, New York.



If you want to cut costs - - - cut weight!



183 GALLONS RIDE FREE

in place of 1255 lbs. of deadweight saved by U·S·S COR-TEN construction

IF BUILT of carbon steel this truck tank would weigh 8,500 lbs. But by building it 2 gages lighter with U·S·S COR-TEN its weight has been reduced to 7245 lbs.

The more than half a ton of useless deadweight thus trimmed off makes it possible to carry 183 gallons of payload *at no extra cost*. Figuring hauling cost low, at ½ cent per gallon, this means a saving of 91 cents on every trip the truck makes. Day after day, through the life of the truck these free-riding gallons pay a growing profit in reduced operating costs.

When you use U·S·S COR-TEN to build gasoline hauling units lighter, you get the *biggest* return from weight saving because you don't have to pay an excessive premium for weight reduction. It's a fact. Today, COR-TEN pound for pound costs so little more than plain steel, that leading truck tank builders report that they reduce weight with U·S·S COR-TEN with very little or no increase in cost.

Here's something else to keep in mind. COR-TEN construction does more than save costs by saving weight. Because U·S·S COR-TEN has 4 to 6 times greater resistance to atmospheric corrosion than plain steel, is 1½ stronger and is tougher and more resistant to wear and fatigue COR-TEN-built equipment stands up better—and you save on maintenance and repairs as well.

Our engineers will gladly show you how service-tested COR-TEN can be applied to your equipment — to cut weight, boost hauling capacity and reduce operating and upkeep costs. Write our nearest office.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
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U·S·S COR-TEN · U·S·S MAN-TEN · U·S·S ABRASION RESISTING · U·S·S MANGANESE-NICKEL-COPPER

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Dependability and Performance Mean

QUICK STARTS
LONG LIFE
LOW COST PER MILE

Willard Heavy Duty Transport Batteries

Designed particularly to withstand severe vibration and cycling service in commercial applications. Heavy plates. Sturdy hard rubber containers. Willard Safety-Fill Construction. Willard Rubber Insulation and glass fibre retaining mats for severe high mileage service. Selected wood separators and glass fibre retaining mats for normal service.

WILLARD STORAGE BATTERY COMPANY

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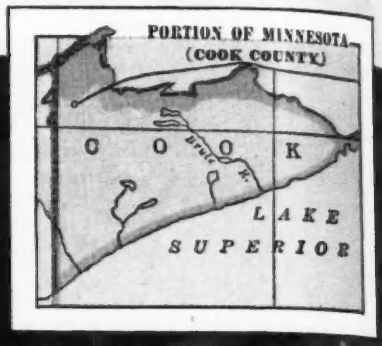
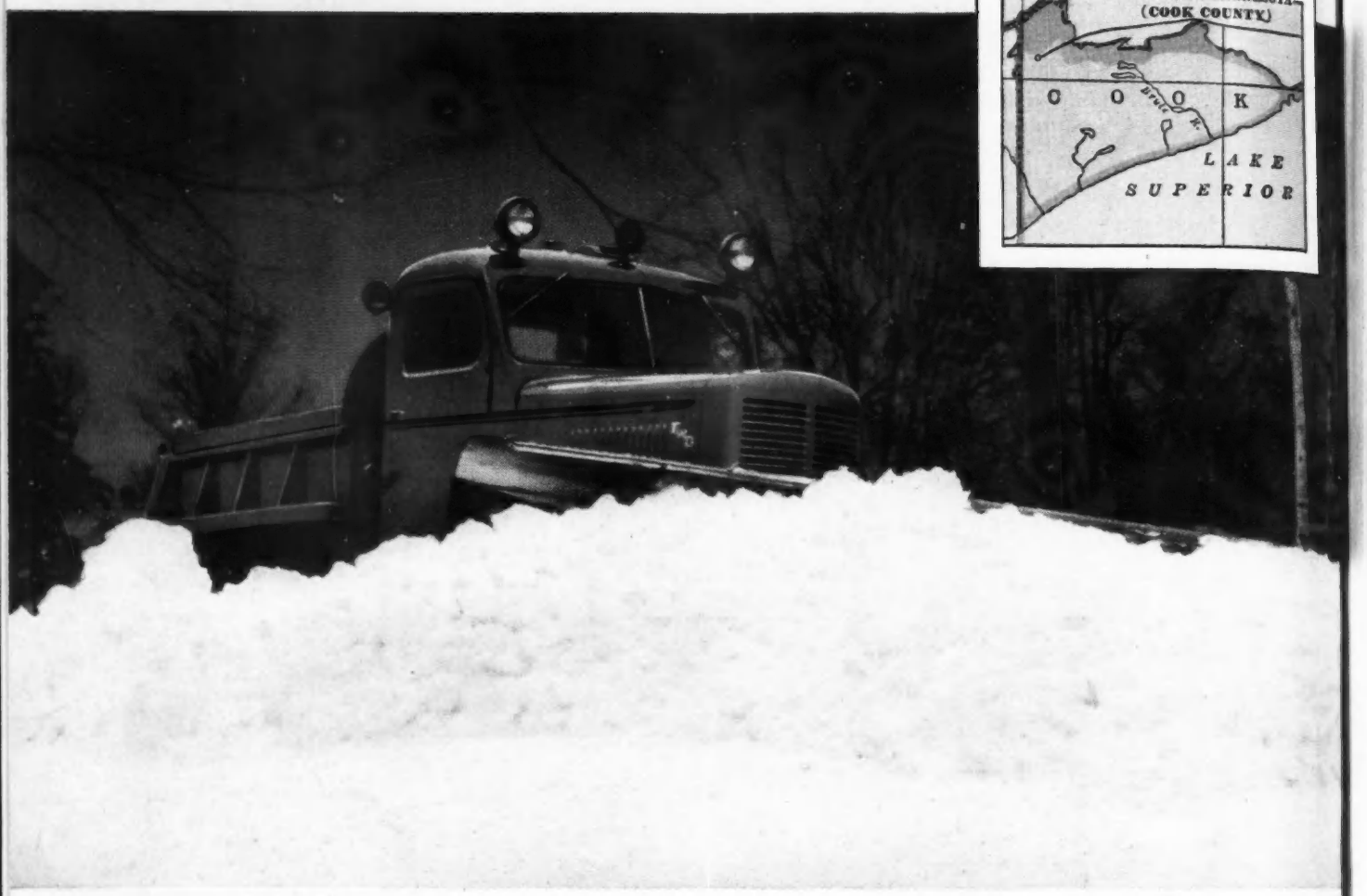
IN NORTHERN MINNESOTA'S FAMOUS GUNFLINT TRAIL REGION...WHERE SNOW FIGHTING IS TOUGH





. . . Four FWDs keep 275 miles of isolated highway clear of snow from mid-November until late March

In Cook County, Minnesota — where winter comes early, stays late, and plays rough — FWD four-wheel-drive trucks keep roads open.

Look at last year's record! Operating from their base at Grand Marais, FWD trucks kept 275 miles of county roads snow-free from mid-November until late March. What's more, only four units were needed to do this tremendous job. And here's why.

With all four wheels driving, you remove snow efficiently at speeds of 20 to 30 miles per hour with FWDs. With front wheels pulling, back wheels pushing, you drive through deep drifts without bogging down. On hilly roads — such as Cook County's famous Gunflint Trail — the grip of four driving wheels pulls you up steep slippery grades safely.

And when winter is over, you can put the same trucks to work grading roads, hauling gravel, and performing other heavy-duty jobs.

To find out why FWD four-wheel-drive trucks are the number one choice of highway departments everywhere, see your nearest distributor or write for complete information.

Model HA-FWD
Owned by Cook County, Minnesota, opens street to high school in Grand Marais

THE FOUR WHEEL DRIVE AUTO CO., Clintonville, Wisconsin
Canadian Factory: KITCHENER, ONTARIO
WORLD-WIDE SALES AND SERVICE

FWD

America's Foremost Heavy-Duty Truck

AGAIN THIS WINTER MORE FWDs WILL BE MOVING MORE SNOW